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MEDICAL SECTARIANISM*

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The existence in the community of various schools and sects, flourishing and popular, each claiming to present a complete system of medical practice, is a vexatious condition constantly confronting the medical profession. The regular profession feels that scientific medicine, being grounded on rational and comprehensive principles, while far from perfect, possesses an entirely different status from that of the sects, and has unimpeachable claims to acceptance. The point of view of the scientific physician makes him unable to perceive any rational basis for sectarian dogmas, and the credence and support which they receive arouse his indignant amazement and exasperation. It brings a shock to our self-esteem when we discover that the public does not accept us at our own valuation, but that in many quarters exist misunderstanding, distrust and antagonism against the medical profession. The experience of the profession in connection with legislative propositions on medical matters has brought a keen and mortifying realization of the extent and fervor of the opposition to medicine.

When, however, we contemplate the zeal, enthusiasm and faith of the devotees of the pseudomedical sects; when we consider the large numbers of their adherents; when we appreciate that their following comes from the most reputable, most substantial and most intelligent sections of the community—from the better rather than the lower classes of society—then we should begin to realize that these popular beliefs are not the product of perversity or wickedness or ignorance, but result from powerful causes deeply rooted in human nature. To ignore these causes, to deny whatever merit or justification the sects may possess, is to meet the situation ineffectively. In view of its manifest powerful hold on human nature we should look on medical sectarianism as a psychologic phenomenon presenting a definite scientific problem, and study its causes, nature and manifestations in precisely the same dispassionate way as we would investigate any other pathologic condition.

PSYCHOLOGY OF MEDICAL BELIEFS

A consideration of the psychologic processes involved in the formation of human beliefs, especially medical beliefs, is essential to an adequate understanding of medical sectarianism.

Theoretically the formulation of beliefs is a function of the intellectual side of the mind. With perfect operation of the mental faculties truth would be elaborated with the unerring and unfeeling mechanical accuracy of an adding or calculating machine. That is the ideal method to be aimed at in the attainment of knowledge; beliefs so formed may be relied on as embodying truth.

Unfortunately, however, the emotional side of the mind is apt to interfere with the proper working of the intellect, and disturbing influences are brought into action which pervert the judgment and lead to error in the conclusions arrived at. There are a number of powerful natural propensities inherent in human nature which influence and dominate human activities, such as the love of life, the sexual instinct, the love of action, the love of knowledge, the love of pleasure, and the love of beauty. These propensities also influence belief, those most potent in affecting the medical beliefs of mankind being the love of life and the thirst for knowledge.

The love of life is one of the most fundamental and powerful instincts of man and animals. "Self-preservation is the first law of Nature;" as a race indifferent to existence might easily become extinct, the instinct for self-preservation and the intense desire for life constitute a biologic character of the highest potency in the perpetuation and evolution of the race. This somatic instinct—manifested as pathophobia, the fear of disease, the dread of pain, the horror of death—is a primal element in human nature, constant and insistent in its action in normal persons and in its exaggeration one of the commonest manifestations of mental disorder. All our thoughts and actions are influenced by this instinct. Everything relating to disease and its treatment is of the utmost interest to people in general, and invested with mysterious fascination; and the disproportionate and excessive concern of man in his somatic well-being is apt to have a disturbing effect on the formation of his medical beliefs. In his terror at the dangers threatening life and health man will grasp at straws, and in his desperate eagerness for help and comfort may form too hasty judgments and put misplaced confidence in specious and fallacious ideas.

A similar influence is exerted by man's concern and anxiety for the well-being of his loved ones, by humanitarian impulsions and by the sexual instinct.

An insatiable thirst for knowledge is another dominant trait in human nature. Just as a superabundance of physical energy or "animal spirits" leads to exuberant physical activity, so does man's superabundance of mental energy lead to exuberant intellectual activity. The human mind confidently aspires to mastery and comprehension of the entire universe, and is reluctant to admit that anything is beyond its powers. Human nature is not satisfied with merely miscellaneous information, but demands a complete scheme of universal knowledge. It is impatient with gaps in knowledge, and

* From the Presidential Address before the Medical Society of the District of Columbia

insistent for completeness, certainty and finality. Our patients, for instance, demand of us immediate and definite diagnoses and prognoses. This eagerness for knowledge and impatience with the unknown is a powerful incitement to premature generalization and ill-founded assumption, and is a potent cause of error and fallacy.

Taken in conjunction with the intense concern of man in his physical well-being, this demand for knowledge becomes preeminently potent in that particular field, and we have a concurrence of influences which by leading to premature and uncritical judgments has always been a source of incalculable error and fallacy in the medical beliefs of mankind. There is no branch of knowledge in which error is so wide-spread and deep-seated, or looseness and superficiality of thought so prevalent, or theorizing, amateurism, faddism and mysticism so general, as in the field of medicine. The generality of mankind are powerfully controlled by these influences in their medical and therapeutic ideas.

On the intellectual side of the mind we can differentiate two distinct methods by which beliefs are arrived at, which may be termed the speculative and the scientific methods.

The speculative method, by deduction, introspection and hypothesis, erects elaborate structures of belief or philosophy on slight foundations of fact. In this method the processes are essentially subjective, deductive and *a priori;* the mind works from assumed cause to effect, from subjective thought into the objective world. Great thinkers in all ages have thus formulated complete schemes covering whole departments of knowledge or the entire universe, and have taken such pride in these brilliant creations of their own intellects, and have regarded them as so complete and perfect, that observation of Nature was regarded as superfluous and unnecessary.

The scientific method works in the opposite direction from the speculative. It is objective, empiric, inductive, *a posteriori* in character. It begins with a study of external phenomena, and from them as a basis works out general laws. Rigidly suppressing preconceived notions and bias, this method by painstaking observation and investigation collects an adequate mass of objective data as a prerequisite to generalization.

Of these two methods, the speculative is far more attractive, and has a much stronger hold on human nature than the scientific method; it is the primitive and natural method of the untrained mind; it the more easily satisfies the innate thirst for knowledge. Uncritical theorizers can easily bring themselves to believe what they wish to believe; scientists can believe only what the evidence permits or forces them to believe. The scientific method is tedious and laborious, and leaves many gaps in knowledge; it does not come naturally, but is a product of training, discipline and culture.

The history of medicine is a convincing demonstration of the utter inability of speculative methods, and of the brilliant competency of scientific investigation, to produce effective knowledge. For thousands of years, during the ancient and middle ages, medicine was completely under the influence of speculative methods of thought; and the sterility, stagnation and inefficiency of medicine during that long period is a convincing proof of the utter futility of those methods. On the contrary, within the brief span of the past hundred years, solely by the employment of the scientific method, medicine has undergone a wonderful transformation and made stupendous advances

While the medical profession has been emancipated from false methods of thought, the medical conceptions of the great mass of mankind are still dominated by the speculative spirit, futile as it is. It is this spirit that actuates medical sectarianism, and its attractiveness to human nature explains the strong hold which medical sects and systems have on the public. The sole distinctive characteristic of regular medicine, which alone gives it an unimpeachable status above and entirely different from that of the medical sects, is its rigorous employment of the scientific method.

PSYCHOTHERAPEUTIC RESULTS

Abundant evidence indicates that in some measure the medical sectarians obtain successful therapeutic results. This we may as well admit, and without reluctance; we need have no fear of the truth. A multitude of witnesses whose intelligence and sincerity cannot be impeached have given appreciative testimony of relief obtained from the application of the various medical systems. If we thoughtlessly or incautiously deny the possibility of benefit being derivable from sectarian practice, we stultify ourselves and weaken our own credibility, since persons perfectly competent to judge of their own relief from symptoms will, if that relief is disputed, regard other opinions of the objector as equally untrustworthy.

Each sect attributes the cures wrought by it to the operation of its own particular principle. As each sect claims to be of exclusive and universal verity, if any one of them be true the theories of all the others are false. The presumption therefore is that they are all false, and that we must seek the cause of the cures effected by such a variety of methods not in the virtues of any one of them but in some other principle brought into action by all of them in common.

This therapeutic agency common to all curative systems is manifestly the healing power of the mind—the *vis medicatrix mentis*—psychotherapy. All forms of medical treatment of sentient patients necessarily bring this principle into operation; and in its action we have a simple and powerful agency which in the main, along with hygienic treatment, explains whatever therapeutic efficacy the medical sects and all other forms of irregular treatment possess.

Psychotherapy is of course likewise largely responsible for results achieved in regular medical practice; and the Christian Scientists and other sectarians at present are giving the medical profession a useful demonstration of its potency. Much that we have credited to the action of our drugs has in reality been due to psychotherapy. The rational physician should feel no hesitation or humiliation in recognizing the large part mental factors play in his work; he should feel called on to study exactly the applicability and methods of psychotherapy, and instead of employing it blindly and unwittingly, utilize it knowingly, purposely and systematically. Nor should we hesitate to acknowledge whatever debt we may owe to the sectarians for bringing to us a realization of the potency of psychotherapy, since what we seek is the truth, regardless of its source, even if in gaining it we have to acknowledge and reject previous error.

It is obvious that the accomplishment of cures in itself alone is no proof of the truth of any theory of healing. The most ignorant persons and the most indifferent methods may be efficient vehicles of psychotherapy. The psychic efficiency of a system may indeed be quite proportionate to its falsity, since ignorance may engender

an enthusiasm and fervor which the materialistic and skeptical physician is unable to evoke. Some persons are natural healers, endowed with innate ability to inspire fervid psychotherapeutic faith. Many such are in the ranks of the regular medical profession, and may have a vogue and popularity disproportionate to their scientific attainments. Others arise from the laity, achieve an enormous influence and following, found schools with multitudes of adherents, and in spite of the error and harm in their systems bring much relief and comfort to humanity.

If psychotherapy comprised the entire healing art, it would not much matter if the systems conveying it were based on erroneous theories; the main object having been achieved, sufferers gaining relief would not be disposed to analyze or criticize the source of their relief. Psychotherapy is not, however, of universal applicability, but has its limitations. In the employment of this or any other single agency in that class of cases in which it is not applicable, to the neglect of the methods that would be effective, lie great possibilities of harm and the fatal objection to dogmatic medical systems. The conditions amenable to psychotherapy cause much mental and physical discomfort and unhappiness, but little mortality directly, while the conditions not adapted to mental treatment include the graver disorders that menace life, and therefore call for the most expert treatment possible.

GENERAL CHARACTERISTICS OF MEDICAL SECTS

From a comprehensive consideration of existing and extinct medical sects and systems we can form a general judgment of their common characteristics.

All of them alike are the products of theorizing and speculative methods of thought, and have therefore appealed strongly to human nature. Usually on a slight foundation of fact, sometimes of pure fancy, is erected an elaborate system covering the entire field of medicine. A principle more or less true in a limited field is taken to be of universal applicability, with disregard and rejection of other principles also included in the aggregate of truth. The attempt is made to reduce all medical principles and methods to one or a few general propositions, to force all facts into accordance with a narrow preconceived dogma. All the systems have accomplished some beneficial results, chiefly through psychotherapy, partly from hygienic treatment and the operation of the *vis medicatrix Naturae*, a few to a certain extent directly from the virtue of their particular therapeutic technic. All of them have caused harm by neglect of really effective methods of treatment in those cases in which their special methods were not applicable, and some by the positive viciousness of their methods.

The general tone of the sectarian literature and thought is one of shallowness and superficiality, generalities and mysticism. The fervid and wide-spread acceptance of sectarian systems evidences an amazing lack of the critical faculty in medical matters among great numbers of people otherwise intelligent. No doctrines are too ridiculous, no practices too pernicious, to be greedily accepted by the undiscriminating public. In scientific medicine it requires wealthy endowments and patient laborious work of many trained investigators to delve out one by one little fragments of truth; and yet the laity without hesitation accepts systems covering the entire field of medicine founded by the most ignorant, illiterate and unqualified persons.

Abundant experience has shown that the speculative methods which characterize medical sects are incapable of yielding effective knowledge. Medicine cannot be reduced to a few general principles; there is no single method of treatment of universal applicability. Every disease is a problem by itself, which must be worked out in all its aspects independently of other diseases. There is no royal road to medical knowledge or practice. Of the great variety of therapeutic measures available, the most effective combination for each particular morbid condition must be determined by exhaustive scientific research and rigorously analyzed clinical experience. The exclusive application of any one method of treatment indiscriminately in all cases of disease causes vast harm through the non-use of methods that might be effective. The deliberate and ignorant waste of opportunities for saving and relieving distressed humanity involved is just ground for the utter condemnation of medical sectarianism, and must cause inexpressible grief and sorrow in the hearts of all humane persons.

Mercenary motives also play a large part in inducing practitioners to adopt sectarian affiliations. The popularity of sectarian designations in some communities is a commercial asset. The less prolonged and less exacting courses of education required in most sectarian schools also lead many would-be practitioners to take that easier and cheaper road to practice.

All the medical systems of the past have had but a transient existence. Widely accepted for a time, they have invariably declined and died out, to be replaced by others. There is no reason to expect that any existing or future sects will have any different life-history. At present, in sects that have had a flourishing existence we can perceive evidences of decline and approaching dissolution, while new sects are springing into existence and developing with great vigor.

Being deeply rooted in human nature, the spirit of medical sectarianism and quackery is not a local phenomenon, nor (as often asserted) is it peculiar to the United States. Quackery is rampant in other countries,[1] such as England and Germany; and while sectarianism as such is less prevalent there, homeopathy and Christian Science are still represented. In France the practice laws are to a certain extent disregarded. In Germany over a third of the medical practice is in the hands of irregulars; and a cure-freedom spirit exists there like our own self-styled medical freedom league.

EXISTING MEDICAL SECTS

Only a brief individual consideration of existing medical sects will be undertaken.

Physiomedicalism, a sect with a small following in a few states, is a survival of the Thomsonian and botanic medical systems, which were founded by a New Hampshire farmer about a hundred years ago and for a few decades had considerable following. Physiomedicalism is moribund, its last college having become extinct in 1911.

The eclectic medical system, which now has six colleges and some following in certain parts of the country, was originated about 1830, chiefly by a group of Thomsonian and botanic practitioners who set out to reform medical practice. The claim that the great revolution in regular medicine effected in the nineteenth century was due in any material degree to the efforts of the eclectics or other sects that arose about that time cannot be substantiated, as the history of the great movements in medical science then taking place in Europe does not reveal any influence exerted by a few obscure Ameri-

1. See Abraham Flexner's Report on Medical Education in Europe, 1912.

can schismatics. Many of the principles professed by the eclectics are quite admirable; but they have nothing to offer in the way of resources, methods or principles that regular medicine does not possess; and the continued existence of the eclectic sect seems simply the perpetuation of a name and organization after the reasons that may have originally called it into being have ceased to operate. Its schools are rapidly diminishing in number. Several of them have recently dropped their sectarian character and become regular; and many eclectic graduates have joined the regular ranks.

Homeopathy, first promulgated by Hahnemann in 1810, before the great renaissance of scientific medicine took place, is a survival of the medical thought of the middle ages. Some of the doctrines advanced by Hahnemann, such as his denial of the healing power of Nature, his teaching that chronic diseases are due to the itch, his belief that shaking drugs increases their power to a dangerous extent, his method of administering infinitesimal doses by smelling sugar pellets, were too fantastic even for his followers to accept. Two cardinal doctrines, however, continue to form the distinctive features of the homeopathic system, the use of similars and the infinitesimal potentized dosage. A careful examination of the original literature constrains me to the judgment that the evidence on which the doctrine of similars was based is utterly unconvincing. The infinitesimal dosage, the centesimal dilutions, the idea that diluting and shaking medicines develop a mysterious potency—all these are stupendous nonsense. A simple calculation shows, for instance, that a single drop of medicine stirred up in the Atlantic Ocean would yield a strength about equal to only the twelfth centesimal dilution; and yet the standard homeopathic dose was the thirtieth dilution, while dilutions running into the hundredths, thousandths and even millionths have been largely used. Of all the medical systems of present or past times, there is none which in my opinion has a scantier basis of fact or reason, a poorer excuse for existence, or a more fantastic set of principles and methods, than homeopathy. Except among a minute remnant, homeopathy as a system of practice at the present time is practically extinct. For the sake of consistency homeopathists still profess nominal adherence to homeopathic doctrine, or reduce the extravagant centesimal dilutions to the three lowest decimal dilutions, which, forming strengths of from 1 to 10 to 1 to 1,000, brings many drugs within the range of effective dosage. When, however, they desire real physiologic results they employ regular practice; for psychotherapeutic purposes homeopathic methods will answer as well as any. Though the practice is abandoned, the name and organization have continued, through force of habit or for pecuniary advantage. As individuals the practitioners of homeopathy in general are excellent and likable men; but the general attitude of the school, in professing to follow one system while really practicing another, smacks of insincerity.

Osteopathy, founded by Still in the seventies of the last century, is at present the growing and flourishing sect. It makes a universal application of a single assumed etiologic factor (obstruction of nervous and vascular channels by bony and other displacements) and a single therapeutic method (manipulation). It is of real merit in offering a method—massage—which is perhaps too much neglected by the regular profession, and not adequately available from regular practitioners. It doubtless effects much good directly from the application of this technic, and much through psychotherapy; but it also causes harm through the non-use of effective measures in cases in which those two therapeutic agencies have no utility.

Chiropractic, recently introduced by Palmer, who disclaims having studied medicine, is in the incipient stage, but shows evidence of carrying a strong appeal to the uncritical. It is similar to osteopathy, its theory being that all diseases are caused by pressure of vertebrae on the spinal nerves.

Christian Science is at present a conspicuous object of the wrath of the medical profession, and yet to my mind it presents features that are interesting and instructive. The basic doctrine of Christian Science, the negation of matter, has a strong metaphysical foundation. Reduced to the last analysis, the only entities in the universe whose existence is absolutely certain and unquestionable are mental ideas; how to prove that objects in the external material universe actually do exist as in the mind they seem to exist is a proposition that the keenest philosophers have attempted to solve in vain. Nevertheless the universal feeling of mankind is that matter exists substantially as it seems to exist; all men invariably act accordingly, and for all practical purposes the existence of matter must be postulated as the basis of all action and all thought. The cult of Christian Science is an interesting attempt to conduct life according to the idealistic philosophy. Whatever its inconsistencies and errors, in many respects the Christian Science philosophy of life is a helpful one. It is a philosophy of optimism—a philosophy that seeks to minimize or ignore the discomforts, the troubles and the evils that beset us. It is not strange that such a cult should have attained a great vogue.

In its medical application Christian Science and its allied cults afford a pure example of the operation of psychotherapy. To a certain extent its basic dogma is true; a multitude of morbid conditions are due to mental error, or, as we express it, are psychogenetic. Just this large class of cases is specifically adapted and amenable to psychic treatment, and Christian Science often affords that treatment in an effective form. But there are limitations to the proper application of the Christian-Science method; and the sad havoc wrought by its attempt to treat all kinds of morbid conditions indiscriminately, to the neglect of the appropriate measures, brings on the cult merited reprobation and condemnation.

REGULAR MEDICINE

The general public to a large degree regards regular medicine merely as one of several schools competing for business, and puts it on exactly the same plane as its rivals, not conceding to it any title to special consideration or recognition.

To the many who look on the practice of medicine solely as a means of making money, one method of extracting dollars from the public must seem as legitimate as any other. It is often charged that the opposition of the medical profession to sectarianism arises from mercenary motives—resentment at loss of patronage and effort to monopolize business. It is doubtful, however, if the profession feels financial deprivation from sectarian practice to anywhere near the extent imagined by our opponents. Much of the practice that goes to the sectarians is of a psychic character, irksome and uninteresting to the average practitioner, which he is glad to be rid of. There are, indeed, business considerations in the practice of medicine that are perfectly legitimate and proper; and there are individual practitioners who are excessively actuated by sordid

motives. Yet to the true physician there is much more in the practice of medicine than the mere making of money, and the general spirit of the medical profession and its attitude toward sectarianism are determined far more by intellectual and humanitarian considerations than by mercenary influences. Certainly men who regularly render a large part of their services gratuitously and are constantly striving to eradicate their own means of livelihood cannot be convicted of being altogether mercenary.

Another ground for misunderstanding arises from the use of the term "medicine" in different senses. Many understand the practice of medicine to mean the use of drugs or medicines solely, to the exclusion of other measures of treatment; such persons take the expression "medical treatment" to be synonymous with "medicinal treatment." Certain sects style themselves "non-medical" or "antimedical," meaning "non-medicinal" or "antimedicinal." We use the term "medicine" in a much larger sense, under the common figure of speech whereby the name of a part is used to designate the whole. To us the practice of medicine means the practice of the healing art, by any and every method or combination of methods—medicinal, hygienic, physiologic, biologic, physical, mechanical, surgical, psychic, prophylactic—most effective for each particular condition. There has been much irrational and wholesale condemnation of drug therapy. While the use of drugs to a considerable extent may be of indifferent utility, yet the efficiency of much drug treatment is beyond contradiction. Scientific medicine is by no means, however, limited to the use of drugs, but employs any and every agency that may be of use. The whole field of therapeutic technic is open to us; any physician is free to follow any method of practice that he may wish. No sect has the exclusive monopoly of any diagnostic or therapeutic technic; no sect has any resource or agency that is not equally at the command of the regular profession. If we employ those methods with skill and judgment, the sects are left without any reason for existence. Under these circumstances, our opponents endeavor to restrict the definition of the practice of medicine to the use of drugs, and thereby they gain an excuse for existence; they thus emasculate and render ineffective our medical-practice laws. Legislative or judicial definitions, however, cannot deprive us of any of our resources or limit the universality of our therapeutic methods.

The one and only factor which gives medicine a standing entirely apart from all medical sects is its scientific character. Of the great body of science at present medicine is an integral component, and has precisely the same standing as any other department of science, as chemistry, geology or astronomy. In the national scientific associations and learned bodies medicine has the same affiliations as other sciences. The medical sects have no scientific character or standing, no connections with scientific bodies.

There are no sects in science, no schools of truth. While facts of Nature are being studied out and until final certainty is attained, there may be legitimate and amicable differences of opinion in the scientific fold; but in ultimate truth there is an essential unity, and no contradictions are possible. The existence of conflicting sects and schools, for instance, of chemistry or astronomy or any objective science, is unthinkable; it is equally incongruous in medicine. The unenlightened public is unable to appreciate the solidarity of truth or to perceive the incongruity of conflicting divisions in medicine or other sciences.

Not being founded on any general theory, scientific medicine objects to being designated by any appellation implying adherence to any dogma. The most objectionable of such designations is the term "allopathy," invented by Hahnemann. It is unjust to attempt to force on us a name to which we object, which does not correctly apply to us, and which simply marks our divergence from a false and decadent system. Every self-respecting physician must resent and repudiate the title. The term "regular" is also awkward and unsatisfactory; it is used only to avoid misunderstanding, and must not be taken to imply recognition of the propriety of any distinctions in the medical body. Even the qualifying designation "scientific" should be superfluous, as it is inconceivable that any competent physician or any effective medical practice could be anything but scientific. The simple term "physician" should be sufficient to comprehend all rational and intelligent practice of the healing art.

It may be frankly admitted that there are many shortcomings and imperfections in regular medicine. The ranks of the profession contain incompetent and unworthy individuals who at heart are quacks, sectarians and fakers. Low standards of medical education in the past have enabled many inadequately trained persons to obtain the legal right to practice medicine. The most competent practitioners make mistakes. There are limitations to our therapeutic resources, and many conditions in which we are unable to render help, in which, of course, our efficiency is no greater than that of the sectarians. All such objections amount to this: that, like other men, we are not perfect and infallible, and our science has not yet attained its complete development. With correct methods and proper motives, scientific medicine alone is in a position to attain the maximum possible of truth and efficiency and the minimum of error and harmfulness.

In its attitude toward sectarianism the medical profession is charged with narrowness and intolerance, and with the intent to abridge the medical liberties of the people. The assurance of medicine rests on the feeling that its scientific foundation is unimpeachable. The scientific method imposes exacting criteria for the acceptance of doctrine; but truths once so established rest on a sure and abiding basis, and we can feel absolute confidence in the validity and permanency of as much of our medical theory and practice as has a thorough scientific foundation. The bacterial causation of infectious diseases, for instance, is now just as firmly established as the law of gravitation or the atomic theory, and it would be a waste of time to give any consideration to eccentric persons who may question it. The medical profession has well-grounded confidence in its methods, is constantly striving for more truth and greater efficiency, and has an abhorrence of error and inefficiency. If this attitude be narrow and tyrannical, so must it be.

REMEDIES

Having discussed the etiology and pathology of medical sectarianism, it remains to consider its therapeusis. What action is to be taken in the matter?

Education.—If the general public could be imbued with a critical scientific spirit, scientific medicine would secure just recognition. Education of the public and general cultivation of that spirit would eradicate medical sectarianism. The prospect of effecting this is remote. Since the beginning of history there has been little advance in the character of popular medical

thought. The belief in charms and superstitions has lessened, and the belief in witchcraft died out—though even that has been revived by the Christian Scientists. But the improvement has been slight and slow, and the credulity and gullibility of the people in medical matters is much the same now as it has always been. The radical transformation of the popular mind requisite to the attainment of a truly logical and critical attitude seems hopeless, though the spirit of the renaissance may yet become general.

Argument.—Argumentative attempts to refute the claims and criticisms of our opponents are usually futile. At committee hearings on legislative propositions in which the profession participates, little impression is made. Often each side misses the exact point of view of the other, and the discussion is at cross-purposes. Most faddists are not amenable to reason, as is illustrated in the current controversies on vaccination and vivisection. It is impossible to reason with irrational persons, with persons inflamed by hysteria and totally regardless of evidence and logical principles. Such persons have cunning tricks for confounding straightforward opposition; they may make an impression by unbridled exaggeration or dogmatic reiteration of unproved assertions; but they lack the logical faculty and are incapable of reason. Under such circumstances argument and explanation are a waste of time, energy and dignity.

Suppression.—In view of the possibilities of harm there are many who would favor the prohibition of sectarian practice. The difficulty with this rests in the curtailment of individual liberty; even the fool, within limits, has a right to his folly. Coercion is not a worthy or successful way to esfablish one's ideas. Only through overwhelming public sentiment, which does not now exist, would prohibitive measures be permissible or successful.

State licensing of physicians to practice after some test of their qualifications has proved a failure in checking irregular practice. Motives not altogether disinterested have probably to some extent promoted the enactment of this legislation, such as the desire of sects to obtain the prestige of legal recognition, the limitation of competition, and the craze for legislation now prevalent. Under the medical-practice laws worthy practitioners are put to much trouble on removing into a new jurisdiction; but fakers, quacks and irregulars thrive unchecked and new medical cults arise and flourish without the slightest hindrance. It is easy enough to license physicians, but in the present state of public opinion it is impossible to suppress practice by unlicensed individuals. Our opponents are sufficiently shrewd and influential to see to it that the legislative definitions of the practice of medicine are too elastic to hold in court. The only great benefit that has been obtained from our practice acts has been that, indirectly, they have been influential in raising the standards of medical education.

The status of scientific medicine is lowered, and that of the medical sects raised, by their association under the law on a common plane. The profession cannot with dignity and honor willingly assent to such an association, but may submit to it only under protest. Any compromise with or partial recognition of established forms of error impairs our position and weakens or nullifies the force of our objections to other forms of irregular practice.

Even a proportionate numerical representation on the licensing boards is denied us; the sects combined can control the boards, though all their practitioners together number far less than ours. For example, the one solitary eclectic practitioner in the District of Columbia has an equal representation on the local board with six or seven hundred regular physicians.

If we must have practice laws, we can consistently assent only to such as ignore or do not specifically recognize any divisions in the medical body.

Absorption.—Whenever reasonably well-educated and qualified sectarian practitioners desire to unite with the regular profession I believe that the sentiment of the profession would be or should be to welcome them to full association, regardless of previous affiliations, provided that distinctive sectarian designations and connections be discarded.

Self-Culture.—It must be admitted that under present conditions the prospect of any material elimination of medical sectarianism is remote. But if an obdurate and perverse world will permit little to be effected through general education and legislation, there is one field for improvement freely open to our efforts—ourselves. When viewing the mote in others' eyes it is always well to look to the possibility of a beam in our own; and it is worth considering if in our efforts to improve the world it is not best to begin with ourselves.

The extent of popular adherence to medical sectarianism might be taken as an indication that the medical profession has to just that extent failed in satisfying the wants of ailing humanity. Possibly the existence of the sects is partly due to our own deficiencies. If we would do away with medical sects we must be prepared to give what the people now receive from those cults. If we would abolish osteopathy, for instance, we must provide the therapeutic technic which that system offers. If we would supersede the Christian Scientists we must practice psychotherapy as efficiently as they. The ancient association of medicine with the priesthood had a profound significance, and medicine must still cultivate the priestly element, the element that reaches the heart of humanity, if it would attain its fullest influence and usefulness. Persuasion, not coercion, is the true way to gain the approval of the public; it will be on our own merits that we are sure ultimately to be judged, and who can say that the final verdict of the people will not be just?

The general interests and resources of the profession are more complete on the physical and material side than on the psychic side, and to a large extent we are deficient in the application of psychotherapy. We lack sympathy with and interest in our numerous patients with psychogenetic disorders; we are impatient with their multitudinous complaints; we have no effective treatment to offer them; we are glad to be rid of them. We cannot blame them if they turn to sectarian practice. These sufferers are just as miserable as if they had organic disease, and if relief is possible they are equally entitled to it. If they derive benefit from the sectarians after looking to us in vain, we have failed in what should be an appropriate field for our activities. If we cultivated that field properly, if we utilized psychotherapy rationally and adequately, or if we developed experts and specialists to attend to that class of practice, we would, by retaining its clientele, go far toward abolishing medical sectarianism.

The first duty of the physician is the care of his patients, and to qualify himself for that care by keeping up with the advances of medical science. Other activities, such as philanthropic efforts, social reform, even some hygienic propaganda, are secondary, and

should not be permitted to interfere with the primary functions of the profession. Nor should we narcotize ourselves into stagnation by the pharisaic attitude which in our self-complacency we are prone to assume, that ours is the noblest and most beneficent of all callings, and ourselves the holiest and best of men. Humanitarianism is a noble sentiment, but to be effective it must be grounded on intelligence and knowledge; too much of the philanthropy of to-day, being animated by sentimentality, vanity or well-intentioned ignorance, is barren of results.

Hippocrates said, "He who loves his art loves man." We can best serve mankind by cultivating ourselves and perfecting our science. From every point of view our efficiency and success can come only from knowledge and wisdom, and the key to the whole is the scientific method. This does not mean that we are all called on to engage in scientific research, although those who have the opportunity can do no greater service to medicine and humanity than by contributing new data and ideas through intelligent investigation and observation. To few is it given to make epochal discoveries; the daily work of the great mass of us consists in carrying out the ideas of a few great minds. All of us, however, will attain the greatest efficiency by preserving the scientific attitude, and carrying out every detail of professional work on scientific principles. A receptive attitude, though tempered with healthy skepticism, should be maintained toward all advances in medical science. Some there are who, from intellectual inertia or mental sclerosis, manifest a certain hostility to innovations. This is not the spirit of progress; the therapeutic or diagnostic novelty of one year becomes the commonplace routine of the next.

If, then, we cherish the scientific spirit, if we labor to develop ourselves and advance our art, if we endeavor to meet in full measure the psychic as well as the physical needs of mankind, we shall find ample field for our activities and shall be following the only sure road to efficiency. On this alone depends our professional supremacy, and in this way can we best merit the approval of the public and regain that support which is now given to the sectarians. Confident of the validity of our principles and the sincerity of our motives, we can thus, oblivious to the distrust of the uncritical, the clamor of the hysterical and the malice of our detractors, with patience and serenity labor for the advancement and the glory of our profession.

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A RECURRENT NEUROBLASTOMA OF THE SCAPULAR REGION

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Attention recently has been directed by J. H. Wright[1] to the existence of a malignant tumor the unit of which is to be regarded as an undifferentiated nerve-cell, hence the neoplasmic designation "neuroblastoma," or, less happily, "neurocytoma." The cells of the tumor are associated, as a rule, with delicate fibrils which do not correspond in their staining reactions with neuroglia, collagen or fibroglia, and are provided with rather small, richly chromatic nuclei and scarcely perceptible cytoplasm. The fibrils are arranged in parallel bundles in intimate association with clumps of cells and, in places, the cells are so disposed as to surround tangled masses of fibrils; hence, in equatorial section they give the appearance of rosettes. In the absence of rosettes the tumor might easily be mistaken for a small round-cell sarcoma, under which designation, indeed, most of the cases in the literature have been recorded. The tardy recognition of the growth as an independent tumor would seem to depend on the fact that in certain of the recorded cases the rosettes, though present, were not properly interpreted or the fibrils were absent or overlooked. On the other hand, certain observers, in attempting to interpret the several histologic features, have erred in grouping the tumor with the gliomas. Nevertheless, the fact remains that the neuroblastoma presents features that are characteristic and, once observed, could not readily be mistaken for those of any other known tumor.

That the growth is not an infrequent one is indicated by the fact that Wright saw five instances in a year and, since the publication of his paper in the latter half of 1910, he tells me, in a personal communication, that he has observed still another case. Undoubtedly several typical cases have been described in the literature under false conceptions and misleading titles. On the other hand, I have not been able to find any record of the growth having been recognized during the past seven years in the pathological laboratories at the New York Hospital, except in the case about to be described, and several pathologists to whom I showed microscopic sections of the tumor were unable to identify it.

Thus far the majority of neuroblastomas have sprung from the adrenal capsule in which, in the medulla and deep layers of the cortex, undifferentiated nerve-cells are not infrequently present and are often mistaken for lymphoid cells. But that the recognition of primary neuroblastomas in almost any situation in the body may be safely predicted is signified by the fact that undifferentiated nerve-cells migrate from the embryonal nervous system to form the nerves and ganglia wherever encountered; so that it is not surprising to find that, already, the primary growth has been detected at the root of the lung and in the cerebellum. It will be seen that the tumor I describe here may have originated from aberrant neuroblasts in the soft tissues beneath the shoulder-blade, although its derivation from the adrenal capsule cannot be disclaimed.

The most familiar tumor of adrenal origin, of course, is the so-called hypernephroma, but when it is recalled that the adrenal represents, developmentally, two sets of organs which, in higher forms, are fused, it is not astonishing that pathologists have distinguished a group of tumors of medullary origin and therefore genetically separable from the hypernephromas, or that the two sets of growths should be attended by different clinical manifestations. Thus the adrenal hypernephroma, which is of cortical origin, is often attended, in the young at least, by excessive bodily growth[2] and precocious development of the genital organs and accessory genital glands. These facts harmonize with the now generally accepted view that the adrenal cortex is of companion origin with the testicle and ovary, and tend to explain the remarkable hypertrophy of the adrenal that has been described by Marchand[3] and by Crecchio[4]

1. Wright, J. H.: Jour. Exper. Med., July, 1910.

2. Bulloch and Sequeira: Tr. Path. Soc., London, 1905, lvi, Part 2.
3. Marchand: Festschr. f. Rudolph Virchow, 1891, i, 537, 578.
4. Crecchio: Wien. med. Presse, 1866, No 30 p. 763

in so-called hermaphroditism. In the same way it is interesting to recall that Wiesel,[5] Karakascheff[6] and others have drawn attention to the fact that defective development of the genital organs and sexual characteristics is commonly an associated phenomenon in early atrophy or aplasia of the adrenal capsules.

In contradistinction to this it is to be observed that the medulla of the adrenal is an integral part of the chromaffin system and develops in connection with the sympathetic. Thus it has been pointed out by Wiesel[7] that, at a certain stage in the development of the adrenal, there appear collections of cells characterized by richly chromatic nuclei, very scanty cytoplasm and delicate fibrils—the so-called formative cells from which all that is cellular in the sympathetic system arises, including ganglion cells and the chromaffin constituents of the adrenal medulla and of other localities. When these formative cells invade the epithelial anlage of the adrenal capsule they dispose themselves frequently in the shape of rosettes. Wiesel is also responsible for the statement that termination of embryonal life does not necessarily denote completion of evolution in the adrenal medulla, but that, on the contrary, the medulla is almost exclusively a product of postembryonal development and that up to, or even beyond, puberty it contains collections of formative cells or neuroblasts. Hence the frequency with which neuroblastomas are associated with the adrenal medulla is explicable on developmental grounds. No doubt future investigation will prove that aberrant formative nerve-cells are of frequent occurrence elsewhere and thus justify what is at present assumed in order to account for the presence of primary neuroblastomas in unusual and unexpected situations, that is to say, beyond the confines of the adrenal medulla.

Several writers, notably Hutchison[8] and Pepper,[9] have described certain clinical features of tumors of adrenal origin. Although most of the growths were primarily regarded as sarcomas many of them may now safely be referred to the group of neuroblastomas for reasons which will later appear obvious. Hutchison's paper includes the description of a clinical syndrome occurring in children from a few months to 9 years of age and is distinguished, among other things, by ecchymosis of one or both eyelids, unilateral exophthalmos, tumefaction of the adjacent temporal area and enlargement of the regional lymph-nodes. Anatomically the condition is associated with an adrenal new growth of variable proportions and is often attended by secondary deposits in the osseous system, especially in the calvarium, but also in the ribs, spinal column, tibiae, etc. Metastases are also noted with frequency in the liver, kidney and lymph-nodes. A typical case of this description has been recorded by Tileston and Wolbach,[10] a summary of which occurs later. In their case, which was originally regarded by them as a round-cell sarcoma, the microscopic sections have since been reviewed by Wright, who declared the growth a typical neuroblastoma and features it as such in his paper. If confirmation of this diagnosis were needed it is abundantly furnished by the illustrations that accompany the original communication.

In Pepper's contribution to the subject of so-called sarcoma of the adrenal capsule he expresses the opinion that there is a type of congenital malignant disease of this organ characterized, clinically, by rapidly increasing distention of the abdomen unattended by ascites, jaundice, pain or elevation of temperature and associated with enlargement of the liver.

Frew,[11] who has reviewed the subject, collating fifty-one cases from the literature, most of which were recorded under the caption of sarcoma, maintains that the growth behaves differently from a clinical point of view, according as it arises from the right or left adrenal. Basing his conclusions on differences in the lymphatic and venous drainage of the respective organs, he attempts to show that a primary growth of the left adrenal is most often followed by secondary deposits in the liver, ribs, cranial bones, etc., while right-sided growths metastasize most frequently to the upper surface of the liver, the lungs and, in rarer instances, to the calvarium.

Whatever may be the anatomic explanation of the clinical features of malignant adrenal tumors of medullary origin, one cannot fail to be impressed by the desirability of a complete revision of the histology of the recorded cases in the light of the newly discovered neuroblastoma, and by the fact that the tumors in question do fall into two great clinical groups, one characterized mainly by secondary exophthalmos and cranial involvement, the other, by rapidly increasing distention of the abdomen without ascites and by enlargement of the liver.

In 1891 Marchand[3] described the case of a female child, 9 months of age, whose death occurred from morbus maculosus accompanied by hemorrhagic infiltration of both adrenals. On the upper surface of the right adrenal was a cherry-sized tumor which, on microscopic examination, was found composed of tissue which Marchand likened to that of the developing adrenal medulla, suggesting that it actually arose from the sympathetic portion of that organ.

Perhaps the first to describe a neuroblastoma, however, was Norman Dalton,[12] although he failed to recognize its true nature. The growth occurred in a male child, 6 weeks of age. At birth it was noted that the child's abdomen was large, the greater part being occupied by a firm mass evidently involving the liver. The mass grew rapidly and by the end of the fifth week the child's abdomen, midway between ensiform and umbilicus, had attained a circumference of 19½ inches. The superficial abdominal veins were engorged and the tissues round the umbilicus were edematous. Necropsy revealed the site of the left adrenal occupied by a tumor the shape and size of a hen's egg. The tumor was yellowish, firm in consistency and studded with minute hemorrhages. The liver was greatly enlarged and almost completely replaced by infiltrating tumor tissue. Microscopically the tumor is significantly described as made up of round cells lying in a finely granular or fibrillated matrix or, in places, arranged around collections of such material, "like the nuclei of a giant cell."

Three years after the appearance of Marchand's paper, Amberg[13] reported the case of a girl, 2 months of age, who was brought to the hospital because of rapidly increasing distention of the abdomen. The superficial abdominal tissues were edematous and the subcutaneous veins were distended. The right side of the abdomen was occupied by a firm, smooth mass which, at necropsy, proved to be the liver, enlarged and extensively infil-

5. Wiesel: Virchows Arch. f. path. Anat., 1904, clxxvi, 103.
6. Karakascheff: Ziegiers Beitr. z. path. Anat. u. z. allg. Path., 1904, xxxvi, 401.
7. Wiesel: Anat. Hefte, 1901, xvi, 115; 1902, xix, 481; Virchows Arch. f. path. Anat., 1905, clxxx, 553.
8. Hutchison: Quart. Jour. Med., 1907, i, 33.
9. Pepper: Am. Jour. Med. Sc., 1901, cxxi, 287.
10. Tileston and Wolbach: Am. Jour. Med. Sc., 1908, cxxxv, 871.
11. Frew: Quart. Jour. Med., 1910-11, p. 123.
12. Dalton, N.: Tr. Path. Soc. London, 1885, xxxvi, 247.
13. Amberg: Arch. Pediat., 1904, vi, 582.

trated by yellowish-white tumor tissue. Corresponding to the position of the left adrenal there was a tumor measuring 2.5 by 1.3 by 2.5 cm. The right adrenal showed no noteworthy naked-eye changes, but, on microscopic examination, the liver and both adrenals showed the presence of alveoli occupied by rather small cells provided with deeply staining nuclei and very little cytoplasm. Frequently these cells were disposed in ring-like formation, the center of the rings being occupied by an apparently structureless mass staining pinkish with eosin. Although unable to satisfy himself of the genesis of the tumor cells in his case, Amberg compared them with the cells normally encountered in the adrenal medulla of the fetus and noted the resemblance between them.

Richards' case[14] was that of a male child, 2 months of age. Shortly after birth it was observed that the abdomen was distended and that the lower limbs and superficial abdominal tissues were edematous. The veins around the umbilicus were engorged. At necropsy it was found that the liver was greatly enlarged and so richly infiltrated by new growth that only slight amounts of liver tissue were distinguishable. The glands at the portal fissure were extensively infiltrated, while the left adrenal showed the presence of a tumor measuring 2 by 1½ inches. Microscopic examination of this growth revealed an external layer of preserved cortical cells beneath which were innumerable round cells, some of them "arranged round the edges of small masses of homogeneous substance of uncertain nature." The liver was almost completely replaced by tissue of identical nature.

A similar case has been recorded by Küster[15] in a child, 14 weeks of age, whose abdomen was markedly distended and the lower extremities edematous. Post mortem the liver was found greatly increased in size and diffusely infiltrated by whitish tumor material. Scarcely any liver tissue remained. Attached to the right kidney, corresponding to the site of the adrenal, was a tumor the size of a watch. It was limited externally by a thick, grayish layer and, on microscopic examination, revealed preserved adrenal cortical tissue together with a number of cells with richly chromatic nuclei and scanty cytoplasm. The cells were either distributed diffusely or arranged in rosettes around a delicately fibrillated substance. Microscopic examination of the left adrenal, which exhibited no changes to the naked eye, showed extensive replacement of the medulla by tissue having the same structure as that of the tumor in the opposite organ. The liver was almost completely replaced by tumor tissue of identical nature with that of the primary growth in the left adrenal. In a second case observed by Küster[15] a solitary nodule was found in one of the adrenal capsules in a man dead of pyemia. Microscopically the growth was identical with that of the first case.

In both instances Küster regarded the growths as gliomas, in which opinion he was supported by no less an authority than Ribbert, who suggested that the tumors arose as a result of developmental anomalies. But that this diagnosis is erroneous in the light of the recent acquisition of our knowledge of neuroblastomas is indicated not only by the histologic descriptions but by the illustrations that accompany Küster's paper.

In a case recorded by Lapointe and Lacène[16] the left adrenal was the seat of an enormous tumor which these observers, together with Ribbert, looked on, microscopically, as a glioma. The growth occurred in a 19-months-old female. During life the tumor was palpable in the left upper quadrant of the abdomen and an attempt to remove it was followed by transection of the abdominal aorta and death. At necropsy the left adrenal could not be identified, but in its place was a tumor the size of two fists. The mass was adherent to the posterior part of the corresponding kidney and was firm and pinkish in color. The prevertebral muscles in the region of the diaphragm were infiltrated and metastatic deposits were present in the mediastinum. The histologic description of the growth and the two drawings that accompany the paper leave no doubt that the tumor belongs in the category of neuroblastomas.

In Tileston and Wolbach's case,[10] the patient was a male, 16 months of age. About a month before admission to the hospital there suddenly appeared, without obvious cause, purplish discoloration of both eyelids on the right side. At the time of admission exophthalmos was pronounced and the right temporal region was the seat of a mass measuring 1½ by 2 by 3 inches. The preauricular lymph-nodes and those at the angle of the lower jaw were enlarged. At necropsy the right adrenal presented a large hemorrhagic and necrotic tumor originating in the medulla and partly covered by cortical tissue. Extensive secondary deposits were present in the skull, including the frontal and right parietal bones, the dura was studded with nodules and the soft tissues and lymph-nodes in the immediate vicinity of the cranial deposits were infiltrated.

In addition to the case just mentioned Wright[1] reviews briefly four instances of typical neuroblastomas, one involving both adrenals in a still-born child; one a large tumor at the hilum of the lung and multiple tumors of the liver in an adult male; one a tumor of the cerebellum removed at operation and, finally, multiple tumors of the skull, mediastinum, retroperitoneal tissue, pelvis and liver in a female child, 11 months of age. Wright states, furthermore, that he has "also seen microscopic preparations of two other cases of small-cell tumor of the head, which clearly show the ball-like arrangement of the cells and fibrils."

REPORT OF CASE

History.—The patient was a white man, aged 44, single, who was admitted to the surgical service of the New York Hospital, Oct. 5, 1910, complaining of pain in the right arm and shoulder. The patient stated that two years previously he had sustained an accident which rendered him unconscious, but he did not know whether the shoulder region had been directly injured. Aug. 6, 1910, the patient noticed pain in the upper part of the right arm. The pain was lancinating in character and commenced at the top of the shoulder, shooting down the anterior surface of the arm to the region of the elbow, and was worse with the arm at rest. About a month later the patient became aware of a lump in the right shoulder. The growth increased rapidly, but was not painful or tender. The patient was now losing weight and was subject to cough and drenching sweats.

Examination.—There was a large rounded tumor in the scapular region. The mass extended from the upper border of the scapula downward to the angle and from the vertebral border outward to the posterior axillary line, whence it faded into the axillary space. Thoracic amputation was performed by Dr. Frank Hartley.

Specimen.—As received in the laboratory the specimen consisted of an arm and forearm, the outer half of the clavicle and the whole of the scapula together with attached muscle tissue. In the concavity of the scapula was an oval tumor measuring 18 cm. in length and about 9 cm. in breadth. The

14. Richard: Guy's Hosp. Rep., London, 1905, lix, 328.
15. Küster: Virchows Arch. f. path. Anat., 1905, clxxx, 117.
16. Lapointe and Lacène: Arch. de méd. expér. et d'anat. path., Par., 1907, ix, 69.

mass was loosely attached to the areolar tissues in front of the scapula and extended into the axilla and over the shoulder, infiltrating the tissues around the head and neck of the humerus as far downward as the attachment of the deltoid. The tumor was cream-colored, presented innumerable small reddish points, was moderately firm in consistency, although in places gelatinous or necrotic, and minute gritty particles could be felt in it. It could easily be dissected free of all periosteal structures.

The patient recovered from the effects of the operation, but in time evidences of recurrence were observed in the scar of removal and on four occasions attempts were made to eradicate the secondary growths. The patient finally passed from observation and his present whereabouts and condition are unknown.

Microscopic examination of tissue removed from the original growth, the material having been taken from the tip of the shoulder, revealed the presence of what was believed to be a typical spindle-cell sarcoma, the cells being rather short and plump, richly nucleated, with innumerable mitotic figures and provided with very little intercellular substance. I have since taken occasion to reexamine the microscopic sections on which this diagnosis was based and, from the morphology of the growth, I fail to see that any other conclusion was justifiable in the circumstances.

Microscopic examination of the material removed at the second operation showed the presence of inflammatory tissue, prominent in which were giant cells arranged around fragments of sutures. Examination of the tissue removed at the third and fourth operations presented the histology of a typical neuroblastoma. That is to say, the groundwork of the tumor was composed of innumerable cells with scarcely perceptible cytoplasm and rounded or somewhat oval, richly chromatic nuclei lying in a homogeneous or finely fibrillated matrix staining distinctly with eosin (Fig. 1). Mitotic figures were exceedingly numerous. For the greater part the cells were distributed diffusely and without any serious attempt at orderly arrangement, although occasionally they tended to form in parallel bundles, specially around the thicker and better formed blood-vessels. Scattered throughout the tumor at numerous intervals were rosettes made up, peripherally, of a ring of nuclei arranged radiately to a finely fibrillar or structureless substance staining pinkish with eosin (Fig. 2). In some instances the rosettes were elongated and gave the appearance of alveoli. In numbers of the rosettes the nuclei were arranged around structureless, jagged, bluish-staining bodies suggesting calcium deposits. The tumor was markedly hemorrhagic and was frequently traversed by vascular channels varying in size from that of the most delicate capillary to relatively enormous sinuses. The smaller of these channels were lined by a single layer of endothelium and evidently represented newly formed capillaries, but the larger sinuses were limited externally by compressed tumor cells. Free red corpuscles among the tumor cells occurred in great profusion.

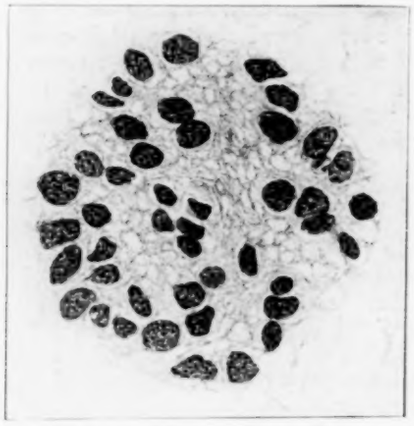

Fig. 1.—High-power drawing, showing tumor cells with scanty cytoplasm, richly chromatic nuclei and delicate fibrils.

SUMMARY

The neuroblastoma is a malignant tumor composed of undifferentiated nerve-cells or neuroblasts and springs most often from nests of such cells lying in the medulla of the adrenal capsule, but occasionally from identical cells existing in other localities. The tumor presents a characteristic histologic picture marked by the presence of delicate fibrils supporting cells with scanty cytoplasm and richly chromatic, rounded nuclei, the cells being arranged diffusely or, in the form of rosettes, around tangled masses of fibrillated or homogeneous material staining pinkish with eosin. In certain cases the fibrils are absent or poorly developed, rosettes cannot be seen and the richly cellular character of the tumor may, in these circumstances, lead to the diagnosis of sarcoma. In deference to its cellular unit the growth in question is most aptly provided for under the designation of neuroblastoma.

Including the case presented in this paper the tumor, as far as I have been able to gather, has been definitely recognized in fourteen instances only.

Of the fourteen cases one of the most striking features consists in the fact that nine occurred in infants ranging from still-born to 19 months of age, and that in eight of the nine cases the origin of the growth was determined in the medulla of one or both adrenal capsules; in the other case the seat of origin is not stated. Of the nine cases observed in infants four were in males and four in females; in the remaining case the sex is not given. Three of the fourteen cases were in adult males; in the other two the sex and age are doubtful. In these five cases the adrenal capsules do not appear to have been primarily at fault, although definite data are wanting.

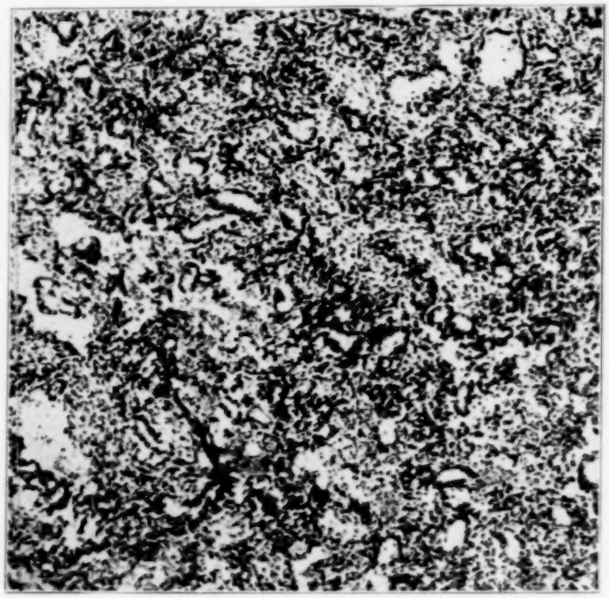

Fig. 2.—Low-power photomicrograph, showing the richly cellular character of the tumor and typical rosettes. The fibrils are not easily distinguishable under this power.

In children it would appear that the growth is divisible clinically into two symptomatic groups, one attended, roughly, by secondary exophthalmos, ecchymosis of the lids, infiltration of the cranium and regional lymph-nodes, the other, by rapidly increasing distention of the abdomen due to neoplasmic infiltration of the liver and unattended by noticeable ascites or jaundice. In adults the number of recorded cases is too small and the clinical manifestations too bizarre to merit more than passing notice at present.

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MELANOTIC SARCOMAS RESULTING FROM IRRITATION OF PIGMENTED NEVI

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It is not my intention to go deeply into the controversy that has waged for so many years as to the origin of melanotic sarcoma, for until the histology of nevi is fully determined, this question will not be settled. From the pathologist's side it is of great interest to determine if the cause be epithelial or endothelial, but to the clinician the chief aim is first, to make a diagnosis and, second, to attempt some form of treatment, which unfortunately, is rarely successful. I am speaking entirely of the melanotic type of sarcoma appearing externally, not of other organs of the body, and am not considering the non-pigmented or the multiple idiopathic hemorrhagic type of Kaposi, which are both more common than the one under consideration. Long life is not incompatible with the two last named, and it may not be until the disease has made considerable progress that fatal results occur, or perhaps some intercurrent disease is the direct cause of death. But this is not the case of the rapidly spreading, quickly fatal, melanotic type, which, when metastasis has taken place, runs a course of months, or at best a couple of years.

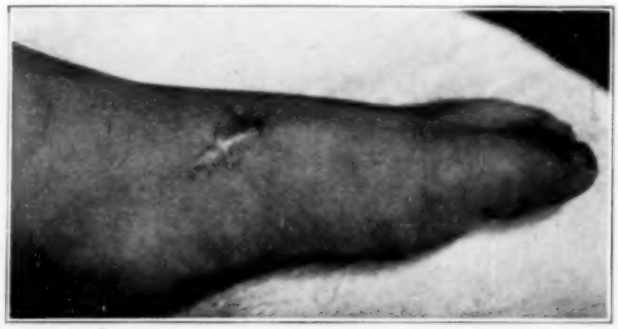

Fig. 1.—Site of original focus. At the upper border can be seen a small glistening dark spot. This was a part of the nevus that had returned after an ineffectual attempt had been made to remove it.

Fig. 2.—Outer aspect of the left leg with the collection of different sized tumors.

Johnston,[1] in a comparatively recent article, presents the following conclusions with reference to their origin:

1. Aside from the natural division into chorioid and skin tumors, melanotic neoplasms, which, from their diversity of origin, are best called melanotic, show several varieties.

2. The commonest, and therefore most important, is that derived from soft nevi which are endotheliomas of lymph-vessel origin. Nevomelanoma, whose histogenesis it is not possible to determine, must be referred to the same origin.

3. A second variety exists with the same histologic picture, which does not spring from nevi, and whose origin is directly traceable to endothelium, probably also lymphatic. This group includes melanotic whitlow and malignant lentigo of the French.

Fig. 3.—Inner side of same leg, with the tumors over the abdomen; penis and scrotum edematous.

4. The third division is truly epithelial in origin, although its existence has been denied. These tumors are of various types and show only a very slight tendency to malignancy, a fact sufficient in itself to determine a cardinal difference from the melano-endotheliomas, whose capacity in this connection can hardly be exaggerated.

5. A histologic diagnosis is the only proper method of differentiation between the two.

Neither is it my intention to do more than simply mention these different types of sarcoma which occur on the skin and which have been most thoroughly studied by many writers, among whom are Hartzell,[2] Gilchrist,[3]

1. Johnston: Am. Jour. Cutan. Dis., 1905.
2. Hartzell: Jour. Cutan. Dis., 1893, p. 21.
3. Gilchrist: Tr. Am. Dermat. Assn. for 1898.

Schalek,[4] Kaposi,[5] Fordyce,[6] Wende[7] and Sequeira and Bulloch.[8] But in presenting this case I wish to use it as an illustration of the harm that can be done by teasing or irritating this most malignant type of skin cancers. Palliative measures are absolutely contraindicated. The nevi from which metastasis occurs should not be disturbed unless there is a slight irritation or peripheral extension, or unless some signs of ulceration or degeneration are shown. When this occurs wide and deep excision is the only thing to be done, in the hope that it is not too late to prevent the extension of the process.

Gilchrist,[9] in an article to which reference will be made later, reports one case in which the patient cut off the top with a razor. Other cases have been reported in which metastasis has rapidly followed the use of the *x*-ray. It cannot be too forcibly borne in mind that any irritation to an apparently benign spot may be the cause of a speedy death. Irritation from an ill-fitting shoe, the clothing, a belt, or in fact from any mechanical

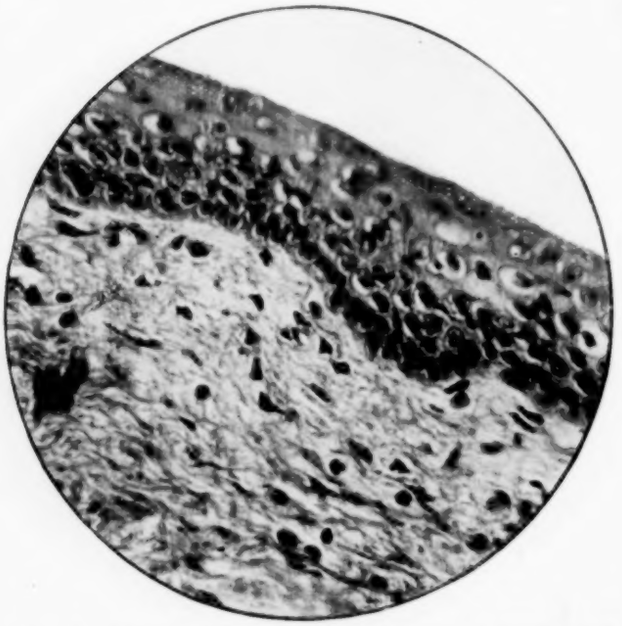

Fig. 4.—Apparent stretching out of the stratum corneum and flattening of the papillary processes. An occasional pigmented round cell is seen near the stratum mucosum, but the larger part of the invasion is in the hypoderm.

means on a nevus of this type may be the cause of very rapid dissemination.

There are few persons who cannot show on some part of their bodies at least one mole, and as a rule they are numerous, but fortunately are of the type in which it is rare for malignant degeneration to take place. Moles that are the most common and cause the least trouble are the light brown ones that have either been present since birth or which in some instances occur during early life. These are soft or firm, of a light or of a medium shade of brown, with or without elevation; one has only to examine one's own body to find examples of this type. But the type that is irregular in outline, waxy, smooth, frequently with but very little elevation and of a dark purplish or bluish color should always be regarded with suspicion, especially if so situated that there is any chafing or irritation. A common situation for this type of nevus is the chorioid coat of the eye, the face or extremities, especially the foot; and again I am

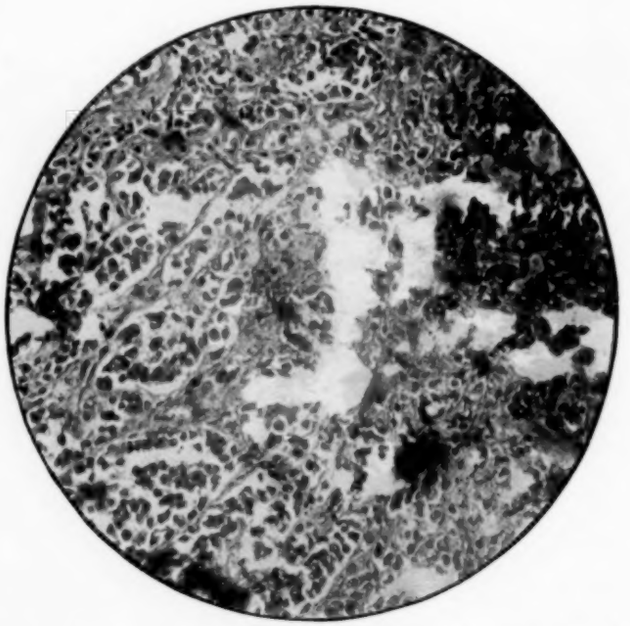

Fig. 5.—Round-cell sarcoma, densely infiltrated with pigment; lymph spaces much enlarged, stroma scanty and to the right an area of degeneration with blood-cells.

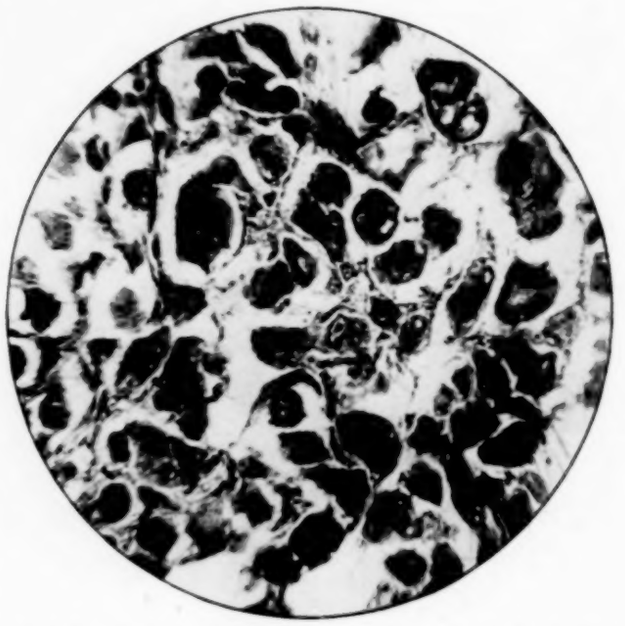

Fig. 6.—Further enlargement of section in Figure 5, showing many of the cells completely filled with melanin.

speaking exclusively of those that are on the skin surfaces, for there have been many cases reported of primary melanotic sarcoma that have developed in other parts of the body. Duval[10] reported one of the gallbladder, Orth[11] of the adrenal, and several others of

4. Schalek: Histogenesis of Melanosarcoma Cutis, Jour. Cutan. Dis., 1900, p. 147.
5. Kaposi: Pathologie und Therapie der Hautkrankheiten, Ed. 5, p. 922.
6. Fordyce, John A.: Melanomas and Some Types of Sarcoma of the Skin, THE JOURNAL A. M. A., Jan. 8, 1910, p. 91.
7. Wende, G. W.: Jour. Cutan. Dis., 1898, p. 205.
8. Sequeira and Bulloch: Brit. Jour. Dermat., 1901, p. 201.
9. Gilchrist: Am. Jour. Cutan. Dis., 1899.
10. Duval: Montreal Med. Jour., 1908.
11. Orth: Berl. klin. Wchnschr., 1900.

equal authenticity have been reported in different parts of the body and central nervous system.

When these pigmented nevi undergo malignancy they may remain localized, like the pigmented rodent ulcer, which is not so very rare; Kaposi says that he has seen a case of the *non-pigmented* variety develop in a few weeks on the side of a healed furuncle and that the patient was still living twenty-five years after. Or they may extend by metastasis, through the blood-stream rarely, more commonly by means of the lymphatics, until all the internal organs are involved and death ensues either from general cachexia or from mechanical means, as the obstruction of a large vessel by an infarct. If the metastasis takes place through the lymph-stream, the enlargement of the neighboring glands may be the first symptom that will direct the patient's attention to the fact that he has something more than a sore on the skin that will not heal. Edema is present early and naturally is progressive as the invasion continues to block up the lymph-channels.

Gilchrist[9] reports a case of melanotic sarcoma that resembles the case which I report, but differs from it in several respects: first, in that the nodules were very much larger as a rule; second, in their being discrete, there being no grouped lesions; third, in metastasis taking place through the blood-stream, as shown by the lack of glandular enlargement and edema; and lastly, that they were freely movable, whereas only a few in my case possessed any degree of mobility. Gilchrist's second case had a definite starting-point from a pigmented mole, and from his histologic findings follows the teaching of Unna that sarcomas of this type are epithelial in origin and are really nevocarcinomas.

REPORT OF CASE

History.—F. C., adult male, aged 56 years, native of Ireland, with family history negative, had always had good general health; patient had the usual diseases of childhood; denied ever having had any venereal infection; had used alcohol and tobacco to excess at times. In the summer of 1910 the patient noticed on the dorsal aspect of the left foot a little to the inner side an elevated spot, which he described as being "hard, and bluish in color." He stated that as far as he knew it had been there for several years; was not able to say if he had had it since childhood for it had never given him any trouble and he had never had any cause to think of it. About this time it began to spread and became slightly inflamed, the cause of which he thought was due to the pressure from the shoe. He tied a horsehair around it and pulled it so tight that the top was cut off. It returned very rapidly and was treated several times by different local physicians by the means of "acids and powders," and he was told that it was a wart. No doubt the teasing to which the growth was subjected is responsible for the rapidity with which it extended by means of the lymph-streams. The rapid spread of this disease can find its analogy in the lightning-like rapidity with which an epithelioma will spread if "touched up" with phenol (carbolic acid), or, for another example, how quickly one on the tongue will light up if irritated by weak acids, alkalies, or improperly applied *x*-ray current, or fulguration.

In March the "wart" was removed in the dispensary of a neighboring hospital, but not to any great depth, as no stitches were taken, and the operation was performed without either a local or general anesthetic. One month after this the patient noticed that the glands in the left groin were much enlarged and went to another hospital where they were removed. There was evidently great difficulty in healing, as he was confined to his bed for six weeks. About two weeks after he left the hospital he was taken with severe pains on the left side directly over the crest of the ilium; returning to the hospital, he had removed from that situation what he called a "boil," and, while it was decidedly inflammatory, he says that it was not of a purplish color and did not resemble any of the lesions that are present on his body. In a few days he began to notice that there were several "huckleberries," as he expressed it, appearing above the knee. This was the middle of July, 1912. The patient was admitted to Jefferson Hospital, Sept. 12, 1912. Coincident with the appearance of this eruption was an intense itching, which had continued more or less persistently and in localized areas until this time, when it became more or less general. As the patient was very ill when admitted and very nervous about his condition, we were inclined to think the itching more the result of a mental condition than of any actual irritation, for his efforts at scratching were much more marked when physicians or nurses were present.

Examination.—Eyes: Both pupils are clear and react normally to light and accommodation; tongue, clean and moist; chest, well-developed, normal pulmonary resonance; heart, regular in beat but muscular tone is poor; faint systolic murmur heard at apex.

Urinalysis: Color, turbid, reddish; specific gravity, 1.022; reaction, acid; albumin, faint trace; sugar, none; urea, 1.2. Microscopic examination: Crystals, none; amorphous urates, few; epithelial cells, few; pus cells, few; blood, none; tube casts, none.

Present condition: On the dorsal aspect of the left foot is a scar (Fig. 1) about 1¼ inches long and ⅝ inch wide, at one corner of which is a typical pigmented brownish, purplish mole, shining, but slightly elevated, irregular in outline and not more than ⅜ inch long. There are no lesions on the outer side of the leg below the popliteal space, above which there occurs a group of about thirty lesions varying in size from a small pea to a hazelnut. (Figs. 2 and 3.) These are closely grouped and in some instances there is no clear healthy skin between. Some are only slightly elevated above the skin and in color most closely resemble the condition which is occasioned by an attack of pediculosis and which is known as *tache bleuâtre*. Those which are larger and more elevated resemble closely the color and appearance of Hamburg grapes, as has been noted by other observers. This eruption continues up the leg, but not so numerously until the area is reached over the head of the femur, where there are groups of grape-like lesions elevated from one-quarter to three-eighths inch, purplish-red, distinctly glistening, and in places slightly covered with a grayish scale. Here there is healthy skin between each lesion with no inflammation and no telangiectasis. Over the groin there is a perfectly healed scar and to the left of this a large lesion which has apparently undergone degeneration, depressed in the center and covered with a thick crust which is constantly being knocked off and quickly reforming. The appearance on the inner surface of the leg is practically the same, but the lesions are not so numerous or so large. The under surface is distinctly inflamed and has comparatively few nodules, but there is a vesicular eruption which ruptures readily and exudes a clear straw-colored fluid. The pigmented eruption continues on the left side of the abdomen as far as the umbilicus and there are a few to the right of it—no more than six over the entire right side of the body. The penis and scrotum are greatly enlarged and have been so for the last three weeks. Edema is only slightly present on the left thigh and on the lower leg, though the entire extremity is several inches larger in circumference than the right. There are no lesions on the right leg and it is extremely emaciated, as are the upper extremities.

Course of Disease.—Sept. 26, 1912: Over the abdomen have appeared about twenty new lesions, which are only slightly elevated and are about half an inch in diameter. One appears over the third rib and is distinctly movable under the skin, apparently being in subcutaneous fat and not in the dermal tissue. The other lesions are not so movable, but occasionally one can be found here or there which possesses some degree of mobility; but this is not a marked feature. The abdomen is much distended, and percussion reveals a large quantity of fluid in the abdominal cavity. Pitting on pressure can be elicited on the left side only and is very marked. On the right side none is demonstrable. The patient has become very weak and has evidently lost a large amount of subcutaneous fat, as his

face is emaciated and has that typical waxy, cachectic look which we associate with cancerous patients. The eyes are sunken, the whites distinctly yellowish. He is able to retain but a very small quantity of food and has had several involuntary movements of the bowels. The tongue is distinctly coated and the odor of the breath offensive.

Oct. 3, 1912: No new lesions have appeared, but the abdomen is much more distended and the percussion reveals the presence of a large quantity of fluid. The edema has extended to the right side and down the right leg to about four inches above the knee. The edema on the under part of this leg is so marked and stops so abruptly that it almost has the appearance of a constricting band being placed around the leg above the knee. There has been no vomiting or purging for two days, and the itching has ceased.

Oct. 10, 1912: Four days previously the patient insisted on returning home, but we still had the opportunity of seeing him, and he died on the ninth. Unfortunately, it was impossible to obtain an autopsy, though every means were employed, and we had to be content with biopsy, microphotographs of the sections of which are shown. (Figs. 4, 5 and 6.)

The history of this case only illustrates that too much stress cannot be laid on the necessity of extensive operative measures in radical cases of this kind. They are not the ones in which palliative treatment may be resorted to, but we must let "the healing touch of the therapeutic knife" go deep and far and wide. It is not at all necessary to remove each nevus for fear that it may become malignant. That would be an endless undertaking. But a nevus of the distinct melanotic type should be watched, and should it show any change in structure or any tendency to extend, the dermatologist, if the patient comes under his care—it is a question to which branch these cases belong—must become the surgeon. This action may save life, but only if taken early.

It must be distinctly remembered that I am confining my remarks to melanotic sarcoma only, for in the other types other treatment may be of avail, as Dittrick[12] reports an apparent cure by the *x*-ray in the non-malignant variety. This is only one of the many cases that have been treated by this means, which undoubtedly should be tried when the nevi are so situated as to be inoperable, as in the inner canthus of the eye. Cases have been reported in which Coley's fluid has been tried, but apparently with little or no success in this type.

I wish to take this opportunity of thanking Prof. Henry W. Stelwagon for his kindness in allowing me to report this case, which was under his care in the Jefferson Medical College Hospital.

2030 Chestnut Street.

12. Dittrick: Jour. Cutan. Dis., 1910.

Salvarsan and the Ear.—G. Gellé calls attention in the *Revue hebd. de laryngologie*, 1912, xxxiii, 449, to three cases in his experience in which the patients became totally deaf under salvarsan, and continuance of the salvarsan treatment failed to cure the deafness. This is still total in two cases, but in the third the ear that became deaf a few days before the other returned to normal after a week. The Wassermann reaction is positive in all and the spinal fluid is quite albuminous with considerable lymphocytosis. Two of the patients had been unable to bear mercury, which was the reason the salvarsan had been employed. Gellé is convinced that the salvarsan had some influence on the production of the deafness, and in future he would restrict treatment to mercury or iodid if he had to treat an ear affection in a syphilitic. One of the above-mentioned patients was a young woman, and five injections of salvarsan were made in all in the course of three months. The doses had been 0.3 or 0.4 gm. The deafness came on fifty days after the first and twenty-seven days after the last (third) injection.

ANTITYPHOID VACCINATION IN CHILDREN *

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The prophylactic use of antityphoid vaccine among children has, as yet, received scant attention in medical literature. The subject has been referred to incidentally in papers which I have read at various places during the past year,[1] but heretofore no statistics have been furnished.

Whether the measure be regarded as necessary or merely desirable will depend, to a great extent, on local conditions, but for a large class of young people, it is now, in my opinion, highly desirable. This class includes all those, from 2 to 16 years of age, who leave home for summer vacations, schools and colleges. Osler says:

Typhoid fever is a disease of youth and early adult life. Of the 1,500 cases treated in my wards in the Johns Hopkins Hospital, there were under 15 years of age, 231; between 15 and 20, 253; between 20 and 30, 680; between 30 and 40, 227; between 40 and 50, 88; between 50 and 60, 11; age not given, 1. . . . It is not very infrequent in childhood, but infants are rarely attacked.

The following statistics are based on the records of the inoculation of 359 children, between the ages of 2 and 16 years, who have been vaccinated by fifty different physicians in many parts of the United States; the reports here given may be considered as representing an average opinion of the degree of the reactions.

No attempt has been made to collect statistics regarding the degree of reaction at the site of inoculation, since little variation is noticed; in general there is rather less than is found in adults. The general reactions, as distinguished from the local, divided the cases into four classes, based on the temperature, as follows: Class 1, reactions absent; Class 2, mild, with a temperature up to 100; Class 3, moderate, with a temperature up to 103; Class 4, severe, with temperature over 103.

The dosage is based altogether on body weight and not on age; the child is given that portion of the adult dose which his weight bears to the average adult weight, 150 pounds. If the fraction proves inconvenient, a little more, rather than less, is administered. As with adults, the best time for inoculation is 4 o'clock, or later, in the afternoon, since any reaction will then come after bedtime. This classification of general reactions, with temperature as the principal point, is really a more severe test in children than in adults, as it is well known that the temperature is easily raised in childhood, and a fever is often present from trivial causes.

No harmful effects have been reported in any of the 359 children and, so far as known, none has contracted typhoid fever, although some of the vaccinations were made over three years ago; 42 of the children were inoculated in 1909, 106 in 1910, 172 in 1911, and 39 during the first ten months of 1912.

Revaccination in children should be undertaken earlier and oftener than in adults, since children are immunized on a basis of body weight, and consequently should be given a second course of two or three doses when the weight shows a very material increase. In the absence of final information as to the duration of the immunity,

* From the Army Medical School, Washington, D. C.

1. Russell, F. F.: Results of Antityphoid Vaccination in the Army in 1911, and Its Suitability for Use in Civil Communities, THE JOURNAL A. M. A., May 4, 1912, p. 1331.

we now revaccinate, in any event, after about three years; further experience may show that longer intervals are permissible.

One of the most promising fields of usefulness of antityphoid vaccination in civil life is in the protection of youths and young adults, the most susceptible element of the population, against infection; the magnitude of the problem may be judged from the statistics of the Federal Bureau of the Census.

In the registration area of the United States, there were in 1909, the last year for which complete mortality statistics are available, a total of 3,366 deaths from typhoid fever in patients under 20 years of age, out of a total of 10,722 of all ages, or almost one-third of all deaths from the disease. They were distributed according to ages as follows: under 2 years, 97; under 3 years, 139; under 4 years, 132; under 5 years, 110; 5 to 9 years, 647; 10 to 19 years, 2,174.

A very large proportion of these deaths can, without question, be prevented by the more frequent use of antityphoid vaccine.

TABLE 1.—GENERAL REACTION AFTER FIRST DOSE *

		None		Mild		Moderate		Severe	
Age	No.	No.	Per Ct.	No.	Per Ct.	No.	Per Ct.	No.	Per Ct.
2	2	2	100	..	.....	..	....	..	....
3	13	12	92.31	1	7.69	..	....	..	....
4	11	10	90.91	1	9.09	..	....	..	....
5	20	18	90	2	10	..	....	..	....
6	14	11	78.57	3	21.43	..	....	..	....
7	24	15	62.5	7	29.17	2	8.33	..	....
8	30	21	70	9	30	..	....	..	....
9	29	19	65.52	9	31.03	1	3.45	..	....
10	19	11	57.90	6	31.58	1	5.26	1	5.26
11	30	21	70	7	23.33	2	6.67	..	....
12	37	27	72.97	10	27.03	..	....	..	....
13	32	20	62.5	12	37.5	..	....	..	....
14	31	26	83.87	5	16.13	..	....	..	....
15	36	27	75	9	25	..	....	..	....
16	31	24	77.41	7	22.59	..	....	..	....
Totals	359	264	73.54	88	24.51	6	1.67	1	0.28

* Only seven out of 359 had troublesome reactions and of these only one was reported as severe.

TABLE 2.—GENERAL REACTION AFTER SECOND DOSE *

		None		Mild		Moderate	
Age	No.	No.	Per Cent.	No.	Per Cent	No.	Per Cent.
2	2	2	100	..	.....	..	.....
3	12	11	91.67	1	8.33	..	.....
4	11	11	100	..	.....	..	.....
5	18	16	88.89	..	.....	2	11.11
6	14	13	92.85	1	7.14	..	.....
7	23	17	73.91	5	21.74	1	4.35
8	29	26	89.66	3	10.34	..	.....
9	29	22	75.86	5	17.24	2	6.90
10	15	15	100	..	.....	..	.....
11	29	25	86.21	4	13.79	..	.....
12	34	32	94.12	2	5.88	..	.....
13	31	25	80.65	6	19.35	..	.....
14	30	24	80	6	20	..	.....
15	34	30	88.23	4	11.77	..	.....
16	31	26	83.88	4	12.90	1	3.22
Totals.	342	295	86.26	41	11.99	6	1.75

* Only six out of 342 gave troublesome reactions and none was severe.

TABLE 3.—GENERAL REACTION AFTER THIRD DOSE *

		None		Mild		Moderate	
Age	No.	No.	Per Cent.	No.	Per Cent	No.	Per Cent.
2	2	2	100	..	.....	..	.....
3	9	8	88.89	1	11.11	..	.....
4	9	8	88.89	1	11.11	..	.....
5	16	16	100	..	.....	..	.....
6	11	11	100	..	.....	..	.....
7	19	15	78.95	4	21.05	..	.....
8	22	22	100	..	.....	..	.....
9	22	15	68.18	5	22.73	2	9.09
10	13	12	92.31	1	7.69	..	.....
11	23	22	95.65	1	4.35	..	.....
12	28	28	100	..	.....	..	.....
13	27	26	96.30	1	3.70	..	.....
14	27	26	96.30	1	3.70	..	.....
15	31	29	93.55	2	6.45	..	.....
16	23	21	91.30	1	4.35	1	4.35
Totals.	282	261	92.56	18	6.38	3	1.06

* Only three out of 282 were troublesome and none was severe. The mildest reactions after all doses occurred in children under 7 years of age.

TABLE 4.—PERCENTAGE OF GENERAL REACTIONS IN 359 CHILDREN, 2 TO 16 YEARS OF AGE *

Dose	None	Mild	Moderate	Severe
First	73.54	24.51	1.67	0.28
Second	86.26	11.99	1.75	0.00
Third	92.56	6.38	1.06	0.00

TABLE 5.—PERCENTAGE OF GENERAL REACTIONS IN ADULTS (128,903 DOSES)

Dose	None	Mild	Moderate	Severe
First	68.2	28.9	2.4	0.3
Second	71.3	25.7	2.6	0.2
Third	78.0	20.3	1.5	0.1

* Comparison of Tables 4 and 5 shows that the general reaction is much more often absent or mild in children than in adults, even after the first dose, and that after the second and third doses the difference is more marked.

EDEMA AND NEPHRITIS

FURTHER EXPERIMENTS PROVING THE INVALIDITY OF THE COLLOID-CHEMICAL THEORY

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Since the publication of my last article[1] on this subject, further work has been done proving conclusively that the colloidal theory of edema and nephritis is experimentally unfounded. Before presenting this work it may be well to clear away the misconceptions on which Fischer's argument in his reply[2] to my paper is so largely founded.

Since Fischer has raised the question of originality it is worthy of note that practically all of his experiments and ideas which are entitled to scientific consideration were clearly stated by Jacques Loeb, thirteen or fourteen years ago. Thus, the swelling of muscle under the influence of acids, the antagonism between acids and salts, the suggestion that the increase in the weight of a muscle in an isotonic solution is due to the formation of acid in the muscle, and, finally, the hypothesis that acid formation in the organs takes place through lack of oxygen, were long ago clearly set forth by Loeb.[3] These papers were for the most part translated[4] by M. H. Fischer himself. In 1906, Fischer began utilizing Loeb's old experiments and ideas, but

1. Moore, A. R.: Fischer's Theory of Edema and Nephritis, THE JOURNAL A. M. A., Aug. 10, 1912, p. 423.
2. Fischer, Martin H.: A Further Response to Some Criticisms of the Colloid-Chemical Theory of Water Absorption by Protoplasm, THE JOURNAL A. M. A., Oct. 19, 1912, p. 1429.
3. Loeb, Jacques: Arch. f. d. ges. Physiol. (Pflüger's), lxix, 1; lxxi, 457; lxxv, 303.
4. Loeb, Jacques: Studies in General Physiology, Univ. Chicago Pub., 1902, ii, 450, 501, 510.

he omitted to cite any references to Loeb's work in any of his papers, as far as I have been able to discover.

The greater part of Fischer's argument in his recent reply to my criticisms is based on the erroneous idea that a muscle swells in distilled water only when it is removed from the body. He says:

> The laws of osmotic pressure are not being outraged when a muscle removed from its circulation is placed in water, for as long as the muscle is in the body it does not swell even though we drink great quantities of distilled water.

The anatomic and physiologic ideas underlying this are curious, to say the least, and it is astonishing that Fischer failed logically to continue and point out the dire and edematous consequences of drinking acid beverages such as lemonade!

But let us consider, seriously if we can, Fischer's idea expressed here, that as long as the circulation is maintained a muscle may be immersed in distilled water without swelling. That this notion is contrary to fact may be shown by the following experiment: A frog was lightly etherized, the skin between knee and ankle of one leg removed, and the animal put into a basin of fresh water. Four hours later the frog was taken out; the muscles of the skinned leg appeared swollen and were firm to the touch. After removal the gastrocnemius reacted weakly to the electric stimulus and weighed 725 mg., which was 10 per cent. more than the weight (655 mg.) of the opposite unexposed gastrocnemius. The swollen muscle was put into one-eighth-molecular physiologic salt solution and in the course of twelve hours assumed a constant weight (665 mg.) but did not recover its irritability. In other words, a gastrocnemius *in situ* having normal circulation, when placed in direct contact with distilled water, gains about 10 per cent. in four hours and becomes moribund. The experiment was repeated a number of times with the same result. Since muscles behave abnormally in distilled water, we are forced to discard as irrelevant all of Fischer's experiments on muscle swelling in which distilled water was used as a basis of comparison. This reduces his experimental evidence to a negligible residuum.

Fischer objects to his theory being tested on muscles kept in isotonic Ringer's solution, on the ground that such a solution contains salts which prevent the muscle from swelling. Apparently he is ignorant of the fact that blood contains precisely the same salts and in approximately the same concentration.[5] Moreover, blood contains phosphates, carbonates and proteins which tend still further to reduce the development of acidity. Clearly, then, if isotonic Ringer's solution prevents minute quantities of acid from causing muscle to swell, blood is even more efficacious.

Fischer seeks to reduce the theory of osmosis to an analysis which is by no means necessary. He says:

> An osmotic membrane is a "semipermeable membrane"; it allows a solvent (water) to pass through it, but holds back the dissolved substances. A semipermeable membrane about a cell would therefore permit water to pass in and out according to the laws of osmotic pressure, but no dissolved substances.

All of the osmotic effects in living matter are accounted for if we simply assume the solvent to penetrate the cell membrane more readily than do the dissolved substances. A simple experiment given by Osterhout[6] serves beautifully to determine whether a living cell behaves osmotically or purely colloidally. If a spirogyra filament is immersed in one-fourth-molecular sodium chlorid solution, the protoplasm of the cells shrinks for two minutes and then gradually assumes its former volume in thirty minutes. This behavior is in keeping with the osmotic theory, that water is withdrawn at first (the cell shrinks) because the sodium chlorid does not pass through the cell membrane so easily as the water; later the salt does enter, and equilibrium as to sodium chlorid concentration is established within and without the cell. If Fischer's colloidal theory were correct, that the protoplasm loses water because salts enter and form hydrophobic colloids, then we should have a progressive shrinking of the cell as the amount of sodium chlorid within the cell increased, until a minimum volume is reached. But, as the experiment shows, such a result is contrary to fact.

Fischer objects to the use of irritability of muscle as a criterion of life as an "obvious crudity." What further finer criterion would he propose than the ability to function?

Hofmeister[7] has shown that the swelling of gelatin plates is not affected if 10 per cent. of sugar is dissolved in the water. If, then, muscle behaves as a simple colloid, it should swell as rapidly in an isotonic sugar solution as in distilled water. Meigs[8] found that this was true of a dead muscle, but that a live muscle remained unchanged in weight in an isotonic sugar solution. Here is the clearest possible evidence that a dead muscle behaves like a gelatin plate (a colloid) but that a living muscle acts osmotically, and in spite of Fischer's assertion to the contrary, he and Strietmann have not explained this experiment in harmony with the colloidal view of living matter. Surely Fischer would not contend that the sugar, like the salts in Ringer's solution, counteracts the effects of acid formed. Further, Meigs[9] says:

> Fischer does not consider the question whether his tissue was living or dead, and a careful study of his observations shows that the latter alternative must always have been the case long before the end of the experiment, and usually very early in it. Fischer's results show simply that dead muscle, like solutions of fibrin, gelatin and other colloids, takes up water in acid and alkaline solutions and tends to lose it in solutions of neutral salts.

Again, Meigs[10] says:

> Fischer's main results are that dead muscle tends to swell in distilled water and in weak acids and alkalies, and to lose water in solutions of neutral salts.

Loeb[11] has shown that only in isotonic solutions of pure salts will the addition of acid cause muscle to swell, while in hypertonic solutions of pure salts the addition of acid causes an increased shrinking. I have proved[12] that the addition of small quantities of lactic acid up to 0.009-normal in isotonic Ringer's solution causes the gastrocnemius of frogs to shrink markedly. Therefore isotonic Ringer's solution must be 0.009-normal acid or more before a muscle will swell in it. If the solution is only 0.003-normal acid, however, the muscle kept in it tests markedly acid to acid fuchsin. But the preparations made by ligating a frog's leg about the knee, when kept in water, undergo a marked swelling without developing sufficient acid to be detected by indicators. Since this is true and since a much more than demon-

5. Abderhalden: Ztschr. f. physiol. Chem., xxv, 67.
6. Osterhout: Science, xxxiv, 188.
7. Hofmeister: Arch. f. exper. Path., xxviii, 223.
8. Meigs: Am. Jour. Physiol., xx, 199.
9. Meigs: Ibid., p. 196.
10. Meigs: Ibid., p. 199.
11. Loeb, Jacques: Dynamics of Living Matter, p. 43.
12. Moore, A. R.: Arch. f. d. ges. Physiol. (Pflüger's), cxlvii, 28.

strable quantity of acid must be in a msucle before it will swell in isotonic Ringer's solution, then acid accumulation alone cannot account for the increase in weight of an artificial edema. Volhard[13] has proved Fischer's assumption that the artificial edema in the ligated frog's leg occurred because the arterial circulation was cut off, to be incorrect. Volhard's statement is as follows:

> The fundamental biologic experiment made by Fischer was that in which he ligated a frog's leg about the knee, kept it in distilled water and noted the development of edema. He states that the lack of oxygen in the leg so treated is the cause of acid formation, and acid formation is the cause of edema. If, now, one isolates and ligates the main arteries of the leg without ligating the leg, capillary circulation is interrupted. The appearance of stasis can be observed under the microscope, but no edema occurs, although there must be lack of oxygen. If, however, one frees the veins and arteries and under them ligates the leg, the capillary circulation goes on as usual but edema is produced. Hence in the latter case it is clear that when the lymph circulation is tied off and the blood circulation remains intact, the result is edema.

Maxwell,[14] following up the experiments of Weymouth Reid,[15] has found that a frog's skin if alive acts like a machine pumping water from the outside in without permitting a return flow. By making closed sacs of the skin of frogs' legs, Maxwell has shown that if kept in water such sacs accumulate large quantities of free liquid within them. This action of the skin accounts for the swelling of the legs when they are cut off from the body and put into distilled water.

Fischer's theory of albuminuria may be stated in his own words as follows:

> In albuminuria the albumin of the urinary membrane goes into solution in the urine; the solid colloidal urinary membrane (a gel) becomes a sol.

Such a change is brought about by the gel becoming acid.

Fischer has built his theory mainly on the experimental facts that fibrin and gelatin go into solution more readily in an acid than in a neutral solution, the injection of tenth-normal hydrochloric acid into rabbits causes albuminuria, and the urine of nephritis patients is more acid than that of normal persons. In order to prove his hypothesis Fischer must show: (1) that in experimental albuminuria the kidneys have an increased acidity; (2) that if kidneys are put into an acid solution, more protein dissolves out of them than when they are in a neutral solution.

As to the first point, I have shown[16] that there is no demonstrable acid in the kidneys of a rabbit in which albuminuria has been produced by hydrochloric acid injection. Fischer supposes that the acid forms protein compounds in the kidney and that therefore such acid cannot be detected by indicators. In order to give his hypothesis scientific footing he must show that such an increase in acid-protein compounds actually takes place in albuminuria. This he has not done.

Moreover, Fischer has never shown that if a kidney is made acid, more protein will go into solution than if it remains normal. To test this point, I made the following series of experiments.

> The kidneys were taken from a freshly killed rabbit, the connective tissue and fat carefully removed from them, and each cut longitudinally into halves. Each kidney was then put into a beaker containing 50 c.c. of one-sixth molecular physiologic salt solution. One solution was acidified by the addition of 0.3 c.c. of 0.75-normal lactic acid, the other remained neutral. At the end of twelve hours the preparations were thoroughly stirred and equal amounts from each preparation poured into test-tubes of the same caliber. The proteins were then precipitated by Esbach's reagent. At the end of twenty-four hours another pair of samples was taken and treated in the same way. In each case the precipitates were allowed to settle twenty-four hours, and comparison at the end of that time showed that the kidney in the neutral solution gave an amount of precipitate equal to or possibly greater than the one in the acidified solution. In like manner, various degrees of acidity made by adding 0.1 c.c., 0.2 c.c., 0.6 c.c. and 1 c.c. of 0.75-normal lactic acid to each 50 c.c. of the isotonic Ringer solution were tested as to their effect on rabbit kidney. In none of the cases did the kidney in the acid solution give a greater amount of precipitate than the control kidney which remained in a neutral solution. Therefore lactic acid does not cause the proteins of the kidney to go into solution.

Furthermore, if Fischer's theory as to the proteins in the urine being due to the dissolution of the kidney by acid were correct, we should expect these proteins to be largely nucleoproteins or their metabolic products, on account of the highly nucleated structure of the kidney. This, however, is not the case, because by far the greater part of the protein in the urine of nephritis patients is serum albumin and serum globulin.[17]

After all, the colloid-chemical theory of edema and nephritis would perhaps be justified if it served as the basis for successful treatment of these diseases. Unfortunately, in the hands of competent and unbiased practitioners, Fischer's methods of treatment have no value.

Von Noorden,[18] as the result of his wide experience in cases of edema and nephritis, advises keeping salts from entering the body, as nearly as is consistent with giving palatable food. His reason is that salt increases the consumption of water and its retention, and throws extra work on the diseased kidneys as well.

Miller[19] reports eight cases of nephritis which were treated by Fischer's method, that is, the injection of a salt solution "made by dissolving 8 gm. sodium carbonate and 15 gm. sodium chlorid in 1 liter of water." In none of the cases were beneficial effects observed except that the blood in the urine was lessened. Three of the patients had marked edema, and this was not affected by the treatment. One patient had a slight edema before the treatment was undertaken, but "after the Fischer's solution had been given for two days, the edema became so marked that it was necessary to discontinue its use."

Sellards[20] reports eleven nephritis cases in which the patients were treated with Fischer's solution. In none were beneficial effects of any consequence obtained. In one case (No. 3) the injections were made into the veins of the left arm, and a temporary edema of the left hand developed.

SUMMARY AND CONCLUSIONS

Fischer's theory of edema and nephritis is a hypothesis unsupported by facts, because:

1. Fischer's conclusions as to edema are based on experiments with dead muscle, and it has been shown that dead muscle does not behave like living muscle.

13. Volhard: Verhandl. d. deutsch. Kongresses f. inn. Med., 1912.
14. Maxwell: Private communication.
15. Reid, Weymouth: Jour. Physiol., xxxv.
16. Moore, A. R.: Arch. f. d. ges. Physiol. (Pflüger's), cxlviii, 167.
17. Neuberg: Der Harn, I, 765, 766.
18. Von Noorden: Address before the faculty and students of the University of California Medical College, San Francisco, Oct. 18, 1912.
19. Miller: Am. Jour. Med. Sc., cxliv, 8.
20. Sellards: Bull. Johns Hopkins Hosp., xxiii, 297.

2. Fischer assumes that when muscles are placed in distilled water they behave normally. This I have proved to be contrary to fact.

3. Fischer assumes the presence of acid in artificial edemas of frogs' legs, but offers no proof for his assumption, and I have shown that a muscle in isotonic Ringer's solution may contain demonstrable quantities of acid without swelling.

4. It has been proved by Volhard that the artificial edema in Fischer's experiments on the frog's leg is brought about by ligating the lymphatic system, and that it is not caused by ligation of the arteries as Fischer contends.

5. It has been proved that there is no demonstrable acid in the kidneys of rabbits having albuminuria, and also that relatively large quantities of acid added to the kidneys do not cause the proteins of the kidney to go into solution.

6. In the hands of unbiased physicians, the use of Fischer's treatment of edema and nephritis gives negative results or worse.

THE COLLOID-CHEMICAL THEORY OF WATER ABSORPTION BY PROTOPLASM

A THIRD RESPONSE TO SOME CRITICISMS

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The latest criticism by A. R. Moore[1] of my colloid-chemical views of edema and nephritis divides itself into a personal and into a scientific part. Under the personal is found this statement:

> Since Fischer has raised the question of originality it is worthy of note that practically all of his experiments and ideas which are entitled to scientific consideration were clearly stated by Jacques Loeb, thirteen or fourteen years ago. Thus, the swelling of muscle under the influence of acids, the antagonism between acids and salts, the suggestion that the increase in the weight of a muscle in an isotonic solution is due to the formation of acid in a muscle, and, finally, the hypothesis that acid formation in the organs takes place through lack of oxygen were long ago clearly set forth by Loeb.[2]

Moore writes without knowledge of the literature. Did I not believe that the work of Hoppe-Seyler, Araki, Irasawa and Zillessen[3] on the abnormal production of acids in the tissues in lack of oxygen; that of Hamburger,[4] von Limbeck,[5] Gürber[6] and Eykmann[7] on the effect of acids and salts on the swelling of cells; that of Grützner,[8] Kahlenberg and True[9] and Heald[10] on the application of the ionic theory to the action of acids on protoplasm, and the colloid-chemical studies of the last decade are more familiar to every other student of the subject than to Moore, I might be tempted to review again the contributions of these authors.

Only a feeling of indebtedness to my teacher and the certain knowledge that the impersonal judgment of time will bring every one his due impels me under misrepresentation still to continue silent seven years after breaking with Jacques Loeb.

Moore continues:

> These papers were for the most part translated by M. H. Fischer himself.

True, and these translated and edited papers are mute evidence of just how valuable Loeb considered his views on edema in the days before I touched the subject from a colloid-chemical point of view. When I translated into English the original German twenty-page paper about which Moore discourses, Loeb had me cut this to four, and had me omit, *against my protestations,* all his remarks on edema.[11]

Moore continues further:

> In 1906, Fischer began utilizing Loeb's old experiments and ideas, but he omitted to cite any references to Loeb's work in any of his papers.

I have written two articles and a goodly portion of a book dealing specifically with the problem of edema. That there may be no misunderstanding I will quote from these directly, hoping incidentally thereby to aid Moore to a correct estimation of the real value that attaches itself to Loeb's contributions to the discussion of edema.

In my first paper I say:

> Here and there one meets a phrase in the discussion of edema which suggests that the author at least assumes the possibility of a cause for this condition in the tissues themselves, but I know of no experiments planned actually to prove this point or of any attempts to define the nature of these tissue changes physicochemically, except those of Jacques Loeb, who, ten years ago, tried to find in an increase in the osmotic pressure of the tissues the cause of the increased absorption of water. The inadequacy of this explanation has since become apparent, but the experimental facts adduced by this author to show that the cause of edema resides essentially in the tissues are of permanent value and should have received a recognition at the hands of pathologists which has never been accorded them.[12]

In my second paper I say:

> Here and there in the literature on edema we encounter statements which show that the author considered the rôle of the tissues themselves in the causation of edema. But with a single exception all these statements are exceedingly general and vague as well as without experimental foundation. Ten years ago, Jacques Loeb tried to explain the increased amount of water held by an edematous cell through the assumption that in states of edema the osmotic pressure of the cell contents is increased. The inadequacy of this explanation for more than a small part of the phenomenon was proved by Overton, who showed that even if all the complex proteins, fats and carbohydrates contained in muscle, for example, were split into their simplest molecules, there would not result a sufficient number to account for such an increase in the

1. The preceding article in this issue of THE JOURNAL.
2. Loeb, Jacques: Arch. f. d. ges. Physiol. (Pflüger's), lxix, 1; lxxi, 457; lxxv, 303.
3. The work of these men is detailed in all text-books of physiology written since the late eighties.
4. Hamburger, H. J.: Arch. f. Anat. u. Physiol., 1892, p. 513; Ibid, 1893, p. 153; Ztschr. f. Biol., 1897, xxxv, 252 and 280, where references to his earlier papers are found. See also Arch. f. Anat. u. Physiol., 1898, p. 31.
5. Von Limbeck, C.: Arch. f. exper. Path. u. Pharmakol., 1894, xxxv, 309.
6. Gürber: Sitzberich. d. med. phys. Gesellsch., Würzburg, Feb. 25, 1895.
7. Eykmann, C.: Virchows Arch. f. path. Anat., 1896, cxliii, 448, where references to his earlier papers will be found.
8. Grützner: Arch. f. d. ges. Physiol. (Pflüger's), 1894, lviii, 69.
9. Kahlenberg and True: Botan. Gaz., 1896, xxii, 81.
10. Heald: Botan. Gaz., 1896, xxii, 1, 125.
11. Loeb's original paper appears in Archiv für die gesammte Physiologie (Pflüger's), 1898, lxxi, 457. His collected papers in English appear under the title Studies in General Physiology, I and II, Decennial Publications of the University of Chicago, Chicago, 1905. What is left of the original article that is the theme of discussion appears on page 501.
12. Fischer, Martin H.: The Nature and the Cause of Edema, THE JOURNAL A. M. A., Sept. 5, 1908, p. 830.

osmotic pressure as is necessary to account on such a basis for the amount of water absorbed by such a tissue. But this fact does not in any way diminish the value of Loeb's attempt to establish a theory of edema on a healthy physicochemical basis, nor yet the value of his experiments which were designed to show that the essential cause for edema resides in the tissues themselves. If these experiments had received their merited recognition by pathologists and clinicians, we would have been spared much of the literature on edema which has appeared during the past decade.[13]

In my book I say:

Of this possible rôle of the tissues, pathologists have not all been ignorant, but for the most part their ideas regarding it have been vague. All the more credit, therefore, belongs to Jacques Loeb who not only first tried to prove through experiment that the problem of edema is essentially a problem of the tissues, but suggested for its explanation a physicochemical force (osmotic pressure) which if not adequate was at least of such a nature as could be conceived active in the living body.[14]

I am still of this opinion. Beyond this, I do not think that Loeb will be pleased with Moore's statement that the ideas I have stood for since 1906 are his. However splendid Loeb's work may be, he has not only contributed nothing to the establishment of a colloid-chemical theory of water absorption by protoplasm, but has actually thrust such theory aside.[15] As well as one can decipher the ever-changing and self-contradictory views of my distinguished teacher, a theory of fertilization which I helped to nurse is not one that he accepts.[16] Our views on water absorption, whether by the normal cell or by the pathologically affected cell, are diametrically opposite. Loeb would expand the biologically applied osmotic conceptions of de Vries, Pfeffer, van't Hoff, Hamburger, etc., to the edematous cell.[17] I reject *in toto*, practically, the osmotic theory as applicable to either the edematous cell or the normal one.[18]. Loeb believes in membranes about cells, and I do not. In his latest article[19] he adopts Nathansohn's mosaic theory, which I rejected several years ago.[20] He knows low concentrations of table-salt which are more deadly than distilled water, while I do not. He believes in the antagonistic action of various neutral salts while I know only of their synergetic action—and these differences of opinion could be multiplied as desired.

As the above paragraphs indicate that Moore is entirely unacquainted with the general literature of water absorption, and with my writings specifically, it hardly seems necessary to consider in detail his inaccurate quotations and his freshly repeated objections to my colloid-chemical views, for I have done this once before.[21]

Moore seems unable to learn that the amount of water held by a muscle or any other tissue inside or outside of the body depends on the state of its colloids, as determined by a play between those factors which favor swelling and those which inhibit it. Acids belong in the first group, salts in the second. In distilled water a muscle loses its salts and therefore swells more than if these were present. We may drink a "large amount" of distilled water without acquiring an edema (because too little salt is lost thereby), but I have never maintained that we could consume an unlimited amount. In fact, I have emphasized the importance of such excessive drinking in producing edema.[22]

When Moore tears the skin off a frog's leg, he injures the muscle below both directly and indirectly through injury to the circulation. An abnormal acid production in a frog so treated is proved by the development of the "reaction of injury." On immersing such a leg in distilled water, salts are lost, and this affects not only the irritability of the muscle, but with the acid accounts for the increased swelling.

If Moore believes that "all of the osmotic effects in living matter are accounted for if we simply assume the solvent to penetrate the cell membrane more readily than do the dissolved substances," he stands alone.

Osterhout's experiment is as easily explained on a colloidal basis as on an osmotic one. Ignoring certain experimental errors and the matter of injury, it is sufficient to point out that monovalent salts diffuse through a colloid more readily than bivalent ones. Sodium chlorid therefore diffuses into a cell more rapidly than bivalent salts diffuse out; hence an initial shrinking followed by subsequent increase in size.

Inasmuch as Meigs has himself now given up his original osmotic notions regarding the behavior of muscle, it becomes unnecessary to discuss Moore's echo of Meigs' discarded views. In his latest paper Meigs[23] says:

These facts are opposed to the view that the smooth muscle fibers are surrounded by semipermeable membranes. . . . Most of the water of the smooth muscle fibers is held by the colloids of the living tissues as organic water.

This is what I have stood for right along and is what Moore does not believe.

I took occasion in my former response to Moore to discuss the balance between acid, alkali and salts in the

13. Fischer, Martin H.: Das Oedem als kolloidchemisches Problem, Kolloidchemische Beihefte, 1910, i, 95.

14. Fischer, Martin H.: Edema, New York, 1910, p. 209. As Loeb's work is discussed also on pages 56, 57, 63, 160 and 176, one wonders from just what sources Moore has obtained his conception of my work.

15. Loeb (Arch. f. d. ges. Physiol. [Pflüger's], 1899, lxxvii, 305) says: "The analogy between the absorption of water by soaps and by muscle is of importance in explaining the mechanism of water-absorption. The majority of authors, for example, Hofmeister, assume that in the absorption of fluids by tissues we deal with imbibition; that is to say, with capillary phenomena. But in the absorption of fluid by soaps we deal with solution phenomena. The forces active here are osmotic and not the surface tension forces active in capillary phenomena." (In Bezug auf die Mechanik der Flüssigkeitsresorption ist die Analogie zwischen dem Verhalten von Seifen und dem Muskel von Bedeutung. Die Mehrzahl der Autoren z. B. Hofmeister, nehmen an dass es sich bei der Resorption von Flüssigkeiten in Geweben um Imbibition handle, d. h. um Capillaritätserscheinungen. Bei der Flüssigkeitsaufnahme in Seifen handelt es sich aber um Lösungsvorgänge. Die dabei maasgebenden Kräfte sind osmotische Drucke und nicht die bei capillaren Vorgängen maasgebenden Oberflächenspannungen.)

16. Fischer, Martin H., and Ostwald, Wolfgang: Arch. f. d. ges. Physiol. (Pflüger's), 1905, cvi, 229.

17. Loeb, Jacques: Arch. f. d. ges. Physiol. (Pflüger's), 1898, lxxi, 457. Loeb writes (p. 468): "I maintain that the driving-force for the movement of fluid in the tissues in cases of edema (as in all other instances) is to be sought chiefly in osmotic pressure, and that a state of edema results; that is to say, an entrance of fluid into the tissues whenever the osmotic pressure in the tissues is higher than that of the blood and the lymph. Edema must therefore result from causes which either increase the osmotic pressure of the tissues or decrease that of the blood and the lymph." (Dem gegenüber behaupte ich dass die Triebkraft für die Bewegung von Flüssigkeit in den Geweben im Falle von Oedem (wie in allen anderen Fällen) wesentlich in dem osmotischen Druck zu suchen ist, und dass es zu ödematösen Zuständen, d. h. zum Eindringen von Flüssigkeit in die Gewebe dann kommt wenn der osmotische Druck in den Geweben höher ist als der des Blutes und der Lymphe. Es müssen also dem Oedem solche Ursachen zu Grunde liegen, welche den osmotischen Druck der Gewebe erhöhen oder den osmotischen Druck des Blutes und der Lymphe verringern.)

18. Fischer, Martin H.: See any of my papers published since 1905 and listed in my previous response to Moore, THE JOURNAL A. M. A., Oct. 19, 1912, p. 1429

19. Loeb, Jacques: Science, 1912, xxxvi, 639.

20. Fischer, Martin H.: Edema, New York, 1910, pp. 95 and 96.

21. Fischer, Martin H.: THE JOURNAL A. M. A., Oct. 19, 1912, p. 1429.

22. Fischer, Martin H.: Nephritis, New York, 1912, pp. 53, 133.

23. Meigs, E. B.: Jour. Biol. Chem., 1912, xi, 401. The quotations are from pages 412 and 413. To forestall the next obvious criticism by Moore that this does not hold for striped muscle, it is enough to refer the reader to the recent work of von Fürth and Lenk (Biochem. Ztschr., 1911, xxxiii, 341) and Wolfgang Pauli (Kolloidchemie der Muskelkontraktion, Dresden, 1912).

fluids and tissues of the body, and also the use of indicators, and need not repeat here.

Volhard's original communication is unfortunately not immediately accessible; but if Moore quotes him correctly, Volhard is in error. Ligation of either the arteries or the veins or both in the leg of a frog is followed by a most beautiful edema. Ligation of all the tissues except the large arteries and veins is also followed by some edema though not so great a one, for this procedure interferes only somewhat with the circulation through the leg.

Maxwell's experiment merely indicates that frog's skin behaves like the kidney, salivary gland, etc., in that it has the power of doing work. I have discussed this problem before. Pumping water through the skin has nothing to do with accounting for the development of an edema in the underlying tissues. In an edematous frog's leg, water lies not merely under the skin. The muscles and other tissues of the leg are frequently so swelled that they burst through the restraining skin.

The rest of Moore's paper repeats his previous criticisms.

This paper concludes my discussion with Moore, and I return to my old resolve to forego all polemic discussion. As I continue my work I shall from time to time touch on such criticisms as I feel spring from scientific skepticism or the answer to which is not obvious from my previous writings. Mere priority discussions can rarely be settled by the involved disputants. Those who seek the truth when such questions arise must themselves seek out the original communications.

A SIGN INDICATIVE OF CHRONIC APPENDICITIS

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The condition I am about to describe has often been found, but I present it in order to induce other observers to assist in coming to some conclusion as to its value in the diagnosis of chronic appendicitis. Chronic concealed appendicitis without active inflammation is difficult to diagnose. Ewald has well named this condition "appendicitis larvata." Exploratory operation in these cases frequently reveals an obliterative appendicitis.

In 1898 a patient consulted me for an obstinate hyperchlorhydria. She gave a history of repeated attacks of appendicitis. On examination I found that a continuous firm pressure with the ends of the first three fingers over McBurney's point induced a referred distress or pain in the epigastrium or precordial region. Later on the patient had a recurrent attack of acute appendicitis which necessitated immediate operation. The appendix was found to have sloughed off and the wound was simply packed. The patient made a complete recovery and has not had any digestive disturbance since.

Since then, in many cases of chronic appendicitis with digestive symptoms, I have been able to induce a referred pain or distress in the epigastrium, left hypochondrium, umbilical, left inguinal or precordial region by a continuous firm pressure over the appendix. I have found this test exceedingly valuable in deciding when and when not to recommend operation for chronic appendicitis. All of the patients on whom an appendectomy has been performed have fully recovered from their digestive trouble. It was usually found on operation that the appendix was distorted, adherent or contracted, and there was nearly always a history of a previous attack of appendicitis. The digestive symptoms were caused by an impingement on the nerves which reflexly induced a perversion in the secretion of gastric juice.

It is frequently difficult to diagnose chronic appendicitis unless the patient suffers from recurrent acute attacks. The subjective symptoms are not in themselves sufficient; in fact, they may be entirely lacking. If the etiology is obscure, there is a temptation to diagnose the condition as nervous dyspepsia, when the patient really has a chronic appendicitis. Many of these patients suffer from anemia, constipation, loss of strength and flesh, and present various digestive and nervous symptoms. The pathologic cause is often found to be a slow proliferation of connective tissue in the walls of the appendix. In many cases the appendix is so contracted that the lumen is partially obliterated as a result of inflammatory thickening. Not infrequently normal drainage is disturbed, secretions are retained and the resulting tension interferes with the circulation. Twisting and bending of the appendix, due to a short mesentery, may be found, with or without concretions. In every case of inflammation there is round-celled infiltration and connective tissue proliferation. This hyperplasia of interstitial tissue continues in chronic appendicitis, so that a fibrous thickening ensues causing pressure on the nerve-endings. The appendix, it must be remembered, has a rich nerve connection, from the superior mesenteric plexus of the sympathetic, with the cardiac, hepatic and gastric plexuses.

The pressure of the connective tissue on the nerves may reflexly induce symptoms that avert suspicion from the cause of the difficulty. We are absolutely certain that appendicular disease does produce gastric and intestinal symptoms. By impingement on the nerves many subjective symptoms are reflexly produced: asthmatic attacks, shortness of breath and tachycardia, as well as symptoms of both gastric and intestinal disease. Practitioners are apt to be attracted to a consideration of these subjective symptoms as if, instead of being secondary manifestations, they were primary, while as a matter of fact the appendix and nothing else may require attention. At operation for chronic appendicitis, macroscopically the appendix may seem absolutely normal, while microscopically the pathologic change can easily be made out. We do not find the appendix distorted in every case, but we find distortion, a clubbed appendix, adhesions and even pockets of pus.

McBurney was the first to call our attention to the pain on pressure in the right inguinal region in acute appendicitis. This tender point may also be found in some cases of chronic appendicitis, though not in all. The referred distress or pain induced by continuous pressure over McBurney's point seems to me to be a most valuable sign in arriving at the diagnosis of chronic appendicitis.

The following few cases out of many that have come under my care will illustrate my point:

CASE 1.—Mr. D. gave a history of repeated attacks of distress in his stomach, extending over three years. Appetite was good, the bowels were constipated and there was some backache and shortness of breath; to attempt deep breathing produced nausea. Ten years previously he had had an attack of what seems to have been acute appendicitis. On examination of the stomach contents I found hyperchlorhydria. Physical examination was negative. Continuous digital pressure over McBurney's point induced pronounced distress in the epigastrium, which subsided when the pressure was released.

The patient was placed on alkalies for his hyperchlorhydria for three months without any benefit. An appendectomy was advised. Operation showed that the appendix was intact but unusually long and chronically inflamed. There was a stricture 4 cm. (1½ inches) from the distal end. Another pathologic feature of the case was the kinking of the ileum by a short, firm fold of mesentery opposite the true mesentery. Division of this gave a looseness to the ileum and freedom of drainage which had not existed before. After the removal of the appendix the patient made a complete recovery.

CASE 2.—Mr. T., aged 41, complained for five years of digestive disturbance. Two or three hours after meals he experienced epigastric distress, belching sour gas. He was easily tired, had backache and was quite nervous. Bowels were normal. Physical examination proved absolutely negative. An examination of the stomach contents showed that he had hyperchlorhydria. Palpation over the whole abdomen elicited no pain. Continuous deep pressure over the appendiceal region induced a feeling of distress in the epigastrium which the patient asserted to be similar to his digestive disturbance, complained of two or three hours after meals. On removal of the pressure, the distress experimentally produced subsided. Diagnosis, chronic appendicitis. The patient was placed on alkalies for his hyperchlorhydria, which seemed to keep him comfortable. Just as soon as he discontinued the alkali his digestive symptoms recurred. I advised the removal of the appendix. At operation the appendix was found to be 8 cm. (3 inches) long and retrocecally adherent. The meso-appendix was very short, rendering ligation difficult. The appendix had a sharp kink in the middle; the distal end showed marked change, with thickening and infiltrated walls. The case proved to be one of chronic interstitial appendicitis with thickening of the walls. The patient made a complete recovery, all stomach symptoms entirely and permanently subsiding.

CASE 3.—Miss D., aged 40, had complained of indigestion for fourteen years. She belched gas, had backache, tired quickly, slept poorly and was very much constipated. Physical examination was negative. A continuous pressure over the appendix induced distress in the left hypochondrium. At no time during the past fourteen years had she been well. At operation it was found that the appendix looked quite normal, but that it was somewhat confined by old adhesions. The main pathologic showing was the evidence of long-standing adhesive inflammation, confining the ascending colon from the cecal extremity past the hepatic flexure. Not only was the intestine confined by the membrane, thus limiting its mobility, but it was also divided by several bands of this exudative membrane into what might be called compartments. The operative measures consisted in removing the appendix and freeing the ascending colon and hepatic flexure. The patient has made a complete recovery.

CASE 4.—Mrs. K., aged 36, had had stomach trouble all her life. Her appetite was reported to be poor; there was severe distress immediately after meals, belching of gas, flatulency, backache and nausea and headaches; she tired quickly; bowels were constipated. Physical examination proved negative. By a firm continuous pressure over the appendiceal region a pain was induced in the epigastrium; the harder the pressure, the more severe the pain. Inasmuch as the patient had been under the care of several good physicians, I explained that it was useless to endeavor to relieve the difficulty by medication. At operation the appendix was readily exposed; it was found to be 11 cm. (4 inches) in length and somewhat thicker than normal. The mesentery extended the whole length, was short and bound the appendix down to the cecum. Surrounding the appendix were a few slight adhesions. One fairly firm adhesion extended from the tip to the parietal peritoneum, covering the psoas muscle. The walls of the appendix were slightly injected. On palpation the organ was felt to be stiffened, but not markedly so. Around the base of the appendix there was an irregular area in the wall of the cecum which was decidedly thickened and slightly injected; this measured approximately 6 by 8 cm. (2 by 3 inches). The patient made a complete recovery, all digestive disturbances subsiding.

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PROTECTION AND REPAIR OF THE PERINEUM *

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It will not be necessary in discussing this subject to review the entire anatomy of the muscles and fascia, because the anatomy of this region is well known; but in order to make the point that I desire to make in protecting the perineum, it will be necessary to say a word about the superficial fascia.

This consists of two layers, the one continuous with that over the buttocks, thighs and abdomen; the inner layer descends from the abdomen, narrowed to the width of the pelvis, but spreads out so as to envelop the anterior triangle at its base. The abdominal fascia is firmly adherent to Poupart's ligament, and the perineal portion to the outer margin of the ischiopubic rami and the inferior margin of the septum, while the pubic portion is attached along a curved line of the bone, which indicates the origin of the muscles of the anterior part of the thigh. A tubular portion extends backward from the margin of the inguinal ring on each side of the vagina and is known as the pudendal sac; when enveloped with skin it forms the labia majora.

It is not my intention in this paper to discuss seriatim the well-known and generally employed methods of perineal protection, but to outline the system of protection that in my hands has been most successful. I do not assert that I am the first who has ever used this plan — I refer here to that part of the plan that brings more stretching tissue to the perineum — but I have never seen this method used and have never been able to find any description in literature of the method of increasing the quantity of stretching tissue.

I deliver the woman in the lithotomy position with knees bent and feet resting on the bed until the expulsion of the head is about to occur. As soon as the head (I shall discuss vertex cases alone in this paper) begins stretching the perineum, I begin to bathe the perineum with sterile water and compound solution of cresol, using sterile pledgets of cotton and having my hands protected with rubber gloves that have been boiled. As the head begins to appear at the vaginal orifice, I push the anterior vaginal floor backward and upward and at the same time push the occiput toward the bregma, attempting as far as possible to flex the head more and more. If the perineum seems very tight when the head no longer recedes with pains and the perineum is on the stretch, I give obstetric anesthesia, because I want the woman entirely under control for the final delivery. After the patient has been given a little anesthetic I have the nurse extend the legs and at the same time evert the feet, turning the toes out and heels in, bringing the thighs as close together as possible while giving me a place to work. This brings the buttocks on each side inward and makes available more tissue for the perineum. I then push the vulva back from the child's head with sterile moistened pledgets, beginning at the sides and always working between pains. While doing this I am attempting to flex the head as much as possible and to deliver the apex of the vertex between pains. As soon as the apex of the vertex is delivered I have the anesthetic pushed or tell the woman to yell if no anesthetic is used, so that I may have her attention

* Read before the Medical Society of Virginia at the Forty-Third Annual Session, held in Norfolk, Oct. 22-25, 1912. This paper is a part of the symposium on occipitoposterior cases.

diverted from the vulva. I direct the nurse to continue the position in which the legs are together, with the feet, legs and thighs rotated outward as much as possible, and I try to make my delivery between pains. I give the shoulders of the child the same sort of attention that I give the head, except that more room is needed between the thighs for work in the delivery; therefore I usually support the perineum by drawing forward the buttocks on each side, with my hand.

The advantage of extending the legs and rotating the thighs out is that skin from the buttocks and superficial fascia is put at the disposal of the stretched perineum in a much better way than the obstetrician can do by using the hand. What the perineum needs is more tissue, not more pressure from without. In pressing against the perineum with the legs flexed on the thighs and the thighs flexed on the abdomen we simply render the perineum more bloodless and increase the tendency to tear.

If the perineum seems so tight that a tear is apparently inevitable, then it is best to nick the vagina at the sides. Dr. Kienster says that when the perineum is stretched to its fullest extent the skin and mucous membrane are pulled over the muscles from 2 to 3 cm., so that a cut into the stretched perineum, or better, into the sides of the stretched vagina to that distance on each side, will not cut any muscular tissue.

In the cases that I report in the accompanying tabulation, the patients were seen in private practice or in consultation, and were delivered according to the plan here laid out. Under instrumental deliveries are included versions.

DISTRIBUTION OF PERINEAL TEARS IN ONE HUNDRED AND EIGHTEEN DELIVERIES

			Per Cent
Instrumental deliveries:			
Primiparas	12		21.8
Tears	10		83.3
Multiparas	6		9.5
Tears	2		33.3
Total instrumental deliveries		18	15.3
Deliveries without instruments:			
Primiparas	43		78.2
Tears	3		6.9
Multiparas	57		90.5
Tears	2		3.5
Total deliveries without instruments		100	84.7
Total number of cases		118	....
Total number of tears	17		14.1
Unconverted occipitoposterior cases	4		....

Olshausen reports unavoidable tears of the perineum in primiparas in 15 per cent. of his cases, Schroeder reports that great care must be taken in primiparas to have as small a number as 15 or 20 per cent. of tears.

I have always repaired the perineum immediately, but must confess that until I adopted the method of repair which I have used in this series of cases, my results were far from brilliant. In the series of seventeen cases I have had but two failures; one was in the most intractable woman that it has ever been my misfortune to attend. The other failure was a tear into the rectum, and even here a moderately good result was obtained with perfect control of the feces and some muscle union. The method was suggested to me by my honored colleague, Dr. Charles R. Robins of Richmond, Va., who outlined the following plan in 1909:

METHOD FOR REPAIRING TEARS OF THE PERINEUM

The procedure is simple; the most important things to consider are a good light and a good exposure of the torn area.

The patient is placed on her back with the thighs flexed on left abdomen and held in place with a suitable support like the Robb-Kelly strap. The vagina is cleansed of clots and the upper part of the vagina packed with sterile gauze or cotton, so as to make the field of operation as bloodless as possible. Then a good light is thrown into the vagina. It is essential for the operator to see what he is doing because the parts are so distorted and bruised that it requires some discrimination to be able to recognize what parts belong together. Robins recommends sewing the mucous membrane and submucous fascia of the vagina to the mucous membrane and submucous fascia of the opposite side of the tear with a continuous chromicized catgut suture. Care must be taken to catch the muscles with the suture. The suture begins at the upper part of the tear in the vagina and is continued down toward the vulva, uniting the mucous membrane and fascia with a continuous running suture, the operator trying to match the part of one side to that from which it has been torn. This restores the shape of the vagina (the vaginal sheath). After the vulva has been reached, the suture and needle are laid in the vagina to be used later to unite the skin with a continuous suture. If there happens to be another tear in the vaginal sulcus or median line, which is almost always the case after the use of forceps, that tear is sewed, the mucous membrane and fascia to the mucous membrane and fascia of the opposite side of the tear with a continuous suture just as on the other side, and when the vulva is reached, the suture is temporarily laid aside.

Then the crown sutures of silkworm gut are put in from the skin surface just as they usually are done, slanting downward and backward; but the rectum should not be entered, as sometimes happens, unless one feels in the rectum with a gloved hand. It is well to pull the wound well forward with the sutures before tying, to see that the perineum is well cared for; then they are tied. The catgut suture that was stopped at the opening of the vulva is then picked up and with a continuous suture the denuded surfaces are brought into apposition and the suture continued down the skin.

If the rectum has been torn, the sphincter ani may be caught and brought together by a silkworm gut suture introduced in the skin just above the rectum, passing through the muscle and out at the other side through the skin. A similar suture just above the mucous membrane of the rectum, introduced from the skin, passing around the tear in the rectum and coming out on the skin of the opposite side, will draw the mucous membrane down like a purse-string.

When the sewing is aided by a good light the result is wellnigh perfect.

The continuous suture brings the denuded and torn surfaces so close together that there is no seeping of lochia or of infectious material and the muscle sutures have a chance to hold.

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EARLY PARESIS

IMPORTANCE OF ITS RECOGNITION; DIFFERENTIAL DIAGNOSIS; MEDICOLEGAL CONSIDERATIONS

ALFRED GORDON, M.D.

PHILADELPHIA

The clinical picture of paresis in the period of its full development is so characteristic and typical that its recognition presents no difficulty in the large majority of cases. The same cannot be said of the prodromal, or earliest stage of the disease, in which the symptoms may be so slight that they can easily be overlooked. Although from its very onset the affection is insidious and slow, it is invariably progressive in its evolution. In some cases the process may be so slow that the earliest manifestations are not recognized and proper measures are neglected, which may lead to deplorable consequences. The patient is permitted and even encouraged to be at large, to travel, to exercise, to undertake great enterprises, to teach, to transact business, to govern and even to make laws. It is only when grave and irreparable errors are committed that attention is drawn to the patient's condition and alarm is sounded.

As an illustration I shall cite the case of a young man who was addicted to venereal excess for several

years. When he began to complain of headache and exhaustion on the least exertion, he was advised to lead an outdoor life and to exercise physically as much as possible. The condition naturally grew worse. For days at a time he would be unable to leave his bed. He began to lose interest in his surroundings and to be forgetful. The diagnosis was still "neurasthenia," and he was advised to continue the outdoor life. He took trips in company with a friend, and soon developed attacks of a special nature. Suddenly, in the presence of people, he would exhibit his genitalia. One attack lasted not longer than a fraction of a minute. It was evidently accompanied by loss of consciousness. When he regained consciousness he found himself with the exposed genitalia and could not understand how it happened. Once he was arrested, as an attack happened in the presence of women. The patient's relatives were inclined to consider this new development as a return to his exaggerated venereal tendencies, for which he was well known before the neurasthenic manifestations made their appearance. In reality, this peculiar conduct was a condition of petit mal, and the entire picture of the case was nothing else than the early phase of paresis, as subsequent events proved.

The recognition of the prodromal and of the earliest manifestations of paresis is of the utmost importance, as this malady is of the gravest nature and its progressive course can be delayed only by proper measures taken at the proper time. Experience shows that the so-called remissions, namely, temporary lucidity of mind with general improvements, occur frequently in cases which have been recognized at the earliest possible moment when proper treatment could be instituted. It is therefore highly important to call attention to the initial condition of a paretic long before the gross and evident symptoms of the disease become apparent.

Paresis may begin either with psychic manifestations or with motor symptoms. In the majority of cases psychic and motor symptoms appear simultaneously. In my series of fifty-nine cases studied for a period of several years from the point of view of its early period, thirty-nine patients presented motor and mental phenomena at the same time. Fourteen patients began their paresis with purely mental phenomena and for weeks did not show a single classical motor sign of the disease. In six cases only were the symptoms purely motor before the mental picture commenced to make its appearance.

PSYCHIC STATUS IN EARLY PARESIS

The essential psychic manifestation in early paresis is the slow, irregularly progressive dementia. As the most delicate and the highest mental functions are invaded the earliest, it is evident that they will be more noticeable in persons of culture than in individuals of gross cerebration. It is in the fulfilment of fine acts, those necessitating the most delicate discrimination, that lapses and omissions will be observed.

The most important mental faculty — memory — is usually affected early in the disease. Amnesia may be slight at the onset of paresis, and as it is manifested only at intervals in words or acts, it is overlooked and the patient continues for a long time to do his habitual amount of work. At first the deficient memory concerns only events which have occurred since the onset of the disease (anterograde amnesia), but soon it embraces also the facts which occurred prior to the onset (anteroretrograde amnesia). The patient shows omission in his daily work, and errors in calculating; his writing shows lapses and repetitions in letters, later in syllables and then in words. The amnesia leads to a certain nonchalance and neglect in his own appearance, and a certain lack of harmony in the details of his own manner of dressing. It explains the most absurd and bizarre acts in his behavior. Punctuality and regularity of habits are neglected and the patient becomes indifferent and apathetic. The usual prudence and reservation of language are replaced by a certain loquacity, unreasonableness and paradoxical argumentation. The majority of paretics in the early periods of the disease are conscious of their defect of memory; this was the case in forty-five of my fifty-nine patients. But what is here particularly striking is that they are in no way affected by the amnesia; they are not disturbed by it in the least. They do not endeavor to avoid their errors; they even ridicule their own mistakes and if occasionally a serious mistake strikes their mentality and disturbs them, it is only for a brief period of time. This indifferance toward the amnesia is a characteristic sign of early paresis.

Simultaneously with the changes of memory, the character, disposition and the moral personality undergo significant alterations. The previously cheerful person becomes depressed; he is unduly irritable; his mood is changeable; he becomes apprehensive, has morbid fears, and begins to show indifference to everybody and everything that used to be of interest to him; he begins to be neglectful of his duties, of his own home, of his own welfare, of his own appearance. His indolence and apathy continue to increase. The entire picture of the condition is suggestive of the neurasthenic symptom group, but this resemblance is only apparent. A depressed early paretic has usually some neurasthenic manifestations, but also other important characteristic phenomena. The differential diagnosis is here of utmost importance. It will be discussed later.

In other cases a totally opposite condition is observed. The usually conservative man has become exuberant in actions and spirits; he makes ambitious schemes, spends money in an unusual way, and purchases articles which are of no special use to him or to his family. The habitually economical man becomes extravagant and spends money without taking into account his circumstances. This exaltation is manifested not only in the intellectual and motor spheres, but also in the affective sphere. The paretic is self-contented, euphoric and optimistic, and this is manifested in his attitude, language and demeanor. There is a tendency to excess, alcoholic and sexual. As the moral sense undergoes gradual changes, immorality is the natural consequence; sexual perversion is not an infrequent phenomenon in the expansive form of early paresis. The break in the moral equilibrium and the alterations of the entire moral personality occur quite early and long before the intelligence is seriously affected.

The exuberance or exaltation observed in this category of patients lacks in depth; it is superficial, incoordinate, without system and without consequences. The psychomotor faculties are augmented quantitatively but not qualitatively. The expansive early paretic with all his agitation is not capable of accomplishing much. The contrast between what he appears to be able to do or between what he promises to do and what he actually does is striking. He is easily fatigued on the least exertion. He is always ready to undertake work, but as soon as he commences it, he must give it up promptly, as he is physically and mentally unable to persist in it.

On the other hand, the inability of the patient to recognize or to realize his infirmity in spite of his cheer-

ful or exuberant spirit is also a most characteristic feature of paresis. The patient does not appreciate the fact that he is ill, that he cannot continue his usual occupation and that he actually fails in performing his work. The difficulty of comprehension of this morbid symptom is the most striking phenomenon even in the early period of the disease. What is still more pathognomonic in paresis is the precociousness of the defective faculty of criticism, especially of criticising one's own acts and conduct. When patients are confronted with the most objective and most evident manifestations of their malady they are not in the least affected; they do not pay the slightest attention, but rather ridicule them and give the most childish and absurd explanations of them; or else they may at first become serious and apparently affected, but promptly the disturbance is all forgotten. Otherwise speaking, the paretic becomes an altogether different person, without himself noticing it or without being affected by it.

The defective memory, the weakened faculty of attention, of observation, of reflection, of judgment and of criticism, the perversion of the moral sense, of character and of disposition, and the radical change in conduct in comparison with the conduct prior to the onset of the disease, all constitute, especially with the inversion of the affective faculties, the most characteristic psychic manifestations of the early period of paresis.

SOMATIC SYMPTOMS IN EARLY PARESIS

Let us now turn our attention to the somatic symptoms.

There are three groups of somatic manifestations that not infrequently announce the oncoming paresis: apoplectic seizures, epileptic seizures and attacks of aphasia.

The apoplexy may consist only of a sudden mental hebetude or confusion or else of a genuine loss of consciousness followed by monoplegia or hemiplegia with or without aphasia. The apoplectic insult is usually brief and the paralysis accompanying it is temporary and transient; rapid improvement and recovery usually follow. In my series of fifty-nine cases, studied particularly from the point of view of the early paresis, apoplectic seizures occurred in only eleven patients before the characteristic symptoms made their appearance. Some of these patients had at various intervals two or three attacks from which they almost all recovered promptly.

Epileptic seizures are another occurrence in early paresis. They were observed in twenty patients. The petit mal form predominated, although four patients had genuine major attacks of the generalized type. In three patients the sensory localized type was observed. It consisted of sudden paresthesias, such as tingling or burning in one hand, in one leg or on one side of the face, including the same side of the tongue. Some authors report attacks of some automatic movements such as suction, deglutition and mastication. Séglas[1] reports an interesting case of spasmodic contractions of the muscles of deglutition as an early symptom of paresis.

Vertigo is another manifestation in early paresis. It occurs in attacks of very brief duration. Possibly these attacks are but a variety of petit mal.

Aphasia is an interesting phenomenon which occurs in the prodromal period of paresis; it may happen without a hemiplegia or monoplegia. The motor form is the most frequent. In ten of my patients it was exclusively motor. The attack is sudden and rarely complete. It is transitory but it has a tendency to recur. Some of my ten patients had as many as eight and not less than two attacks. Sensory aphasia has been observed by some writers, but then the paretic picture of the oncoming dementia becomes complex, if the impairment of the sensory speech persists.

While in the majority of cases the aphasia is temporary, nevertheless in certain cases actual material lesions have been found in the corresponding areas of the paretic brains (Sérieux,[2] Joffroy[3] and Ballet[4]).

It was interesting to me to observe that those of my patients who presented apoplectic, epileptic and aphasic manifestations developed a more rapid course of their affection than those who were free from those symptoms. Moreover, the usual physical signs of paresis predominated in them over the psychic disturbances.

Charcot[5] as far back as 1887 called attention to ophthalmic migraine as an early sign of paresis. In two of my patients neuralgia of the left supra-orbital nerve was present at the same time as psychic manifestations.

Among the very early somatic symptoms of paresis the most frequent is the condition of the pupils. In fifty out of fifty-nine patients the pupils were found irregular and especially unequal. This in my judgment can be considered as almost pathognomonic of the disease. The sluggishness of the light reflex is another frequent sign although not so frequent as the preceding one.

In a large number of my cases, thirty-nine, various palsies of the external ocular muscles occurred at different times, but in the majority of cases they were only temporary. In some, however, the palsy remained unameliorated. A great many patients complain of gastro-intestinal disorders during the early period of paresis when other neurasthenic manifestations are present.

Forty-five of my patients presented increased patellar tendon reflexes, ten showed markedly diminished and five showed normal knee-jerks. In none of the cases with plus knee-jerks was the Babinski reflex detected, but the paradoxic reflex described by me was present in twenty-three of them. In my previous study of the subject[6] the percentage of the paradoxic reflex was higher, but that study was made on individuals with fully developed paresis.

The characteristic speech disturbance which is so frequently observed in paresis during the phase of full development is but occasionally seen in the early stages. The typical fine tremor of the hands, lips and tongue which belongs to the classical signs of the disease is seen with equal infrequency in the early period, although more frequently than the speech disturbance. In my series only twelve showed a fine tremor of the fingers, but not of the lips or of the tongue.

SUMMARY OF SYMPTOMS IN EARLY PARESIS

The constant and characteristic symptoms of the early phase of paresis are first of all the psychic disturbances, which consist essentially of gradual alterations in the intellectual and moral personality. Lapses of memory, errors in the work which the individual has been accustomed daily to perform, rapid loss of acquired habits, indolence and indifference to the once dearest and nearest as well as to his own personality, loss of the usual prudence and reservation, defect in moral conceptions,

1. Séglas: Semaine Méd., January, 1899.

2. Sérieux: Rev. Neurol., 1900, p. 258.
3. Joffroy: Bull. et mém. Soc. méd. d. hôp. de Paris, 1902.
4. Ballet: Rev. Neurol., 1900, p. 346.
5. Charcot: Leçons du Mardi à la Salpêtrière; Policliniques, 1887-1888.
6. Gordon, Alfred: Jour. Nerv. and Ment. Dis., 1907.

together with either a state of depression or else exaltation accompanied by an unusual euphoria and optimism, are the conspicuous signs indicative of oncoming paretic dementia. The peculiarities which particularly characterize the early paretic are, first, his inability to recognize the morbidity of all these alterations in his personality, and second, the total lack of criticism of his own acts and conduct.

The apoplectic, epileptic and aphasic manifestations must be of brief duration to be characteristic of early paresis. The inequality and irregularity of the pupils are other diagnostic signs of the early period of paresis.

The knee-jerks are frequently altered, but they do not constitute a characteristic feature for diagnostic purposes.

DIFFERENTIAL DIAGNOSIS

Paresis may begin with pronounced somatic manifestations, such as epileptic or apoplectic seizures. When the latter are brief in duration and repeat themselves quite frequently and remain persistent, an oncoming paresis should be suspected. In the majority of cases the onset is insidious and slow, particularly in the depressive form. In such cases the symptom-group resembles at first glance that of neurasthenia. In my series of fifty-nine patients, twenty-two were considered as neurasthenics and treated accordingly. It is therefore highly important for practical purposes to consider the symptoms common to both affections and to emphasize the differentiating features.

First of all, the general asthenia, some impairment of memory, the irritability of character, the loss of energy and ambition are all manifestations observed in both maladies; but a closer discrimination will reveal a fundamental difference. A neurasthenic is capable of presenting a detailed account of his ills. He exaggerates his symptoms, it is true; nevertheless they are recited in the most connected manner. The patient repeats his recital often, but this repetition is not because of a genuine amnesia, but because he is anxious to analyze his troubles and to draw his physician's special attention to them. Otherwise speaking, the neurasthenic appreciates his illness keenly. The early paretic is incapable of giving a connected history of his trouble. He frequently interrupts his speech and forgets what he said previously. When reminded he does not attach any importance to it. It is exceedingly easy to make him change the train of his thoughts, which are indeed unstable. Frequently the expression of his face does not correspond to the subject of his conversation, as for example one of my patients showed a smile on his face while speaking of the death of his beloved son. Such a contradictory attitude betrays the fact that, contrary to the neurasthenic who, as I have said, appreciates keenly his trouble, the early paretic is incapable of recognizing properly the ills of which he speaks.

The true neurasthenic becomes easily tired out both physically and mentally. His mental operations are readily exhausted on effort but not disturbed or modified. The paretic, on the contrary, presents genuine diminished intelligence. Besides the above described want of power of criticism and of judgment, the change of the moral personality, the grave omissions and errors in his daily acts and conduct are additional symptoms which will enable one to recognize an oncoming paresis in spite of the presence of neurasthenic symptoms.

There is another method which renders great assistance in making a diagnosis of paresis in its initial period. I wish to speak of the cytologic examination of the cerebrospinal fluid. The lumbar puncture inaugurated by Quincque in 1891 was utilized first by F. Widal and Ravaut for diagnosis of paresis. In normal persons or even in persons with functional nervous diseases, such as neurasthenia, the cerebrospinal fluid fails to form a sediment on centrifugation, or at most but a few isolated leukocytes can be seen under the microscope. In paresis to each hundred leukocytes eighty-five or ninety lymphocytes are found. It has been proved that this lymphocytosis is one of the most precocious signs in paresis. All of my patients presented these findings, with the exception that in forty-seven the first puncture gave immediate positive results. The remaining twelve did not show lymphocytosis at the first, second and even third punctures, which were made at intervals of two, three and four weeks. It can be safely asserted that lymphocytosis of the cerebrospinal fluid is a valuable diagnostic element in cases presenting some difficulty in the differentiation of early paresis and ordinary neurasthenia.

The Wassermann test is another valuable aid in diagnosing paresis. It is pretty well established that in the largest majority of cases of paresis, syphilis is the original cause. This belief finds its strongest corroboration in the discovery of fixation of complement as described by Wassermann. The consensus of opinion concerning this new test is that diseases in which it is found to be positive have a syphilitic origin. On the other hand, in parasyphilitic diseases, such as tabes and paresis, the Wassermann test has been found positive if the patients are not under antisyphilitic treatment. The test can be made either on the blood or on the cerebrospinal fluid. Irrespective of some difference in the findings when practiced on both fluids, it can be safely asserted that when difficulty arises in establishing a differential diagnosis between initial paresis and ordinary neurasthenia, the positive Wassermann test will be found of great utility.

Noguchi has recently introduced a precipitation method which is also pathognomonic of syphilis as an underlying cause. If to 0.1 c.c. of cerebrospinal fluid 5 c.c. of 10 per cent. butyric acid are added and after the mixture is boiled for a minute, 0.1 c.c. of normal sodium hydroxid solution is added and again boiled, a heavy flocculent precipitate (globulin) will form. According to Noguchi the test is positive in 90 per cent. of cases. Ross-Jones simplified the test. He obtained a precipitate when to 1 c.c. of cerebrospinal fluid 2 c.c. of saturated solution of ammonia sulphate are added; a network ring is obtained within three hours.

We are in possession therefore of three valuable diagnostic methods when we are confronted with a difficult problem of determining, as it sometimes happens, whether we are dealing with an incipient paresis or an ordinary neurasthenia. Cytologic examination of the cerebrospinal fluid, the Wassermann test of the blood and of the cerebrospinal fluid, and the Noguchi test for globulin, with Ross-Jones' modification of the latter — all are methods which have been adopted and proved to be of great assistance.

If the differential diagnosis between paresis and ordinary neurasthenia presents in many cases no special difficulty, the same cannot be said of cerebrospinal syphilis. The latter sometimes simulates paresis. In both affections the neurasthenic symptom-group exists. Cerebral syphilis produces a profound neurasthenic state, which resembles appreciably the initial stage of paretic dementia. At this stage the difficulty may be quite considerable and for a long time the diagnosis may remain uncertain. This is particularly so when in

both affections Wassermann and Noguchi tests are positive because of their common etiology and when in both affections lymphocytosis of the cerebrospinal fluid can be found. The laboratory tests are therefore of no great utility for the differentiation of these two affections. We must therefore look for assistance to the general picture and the evolution of the symptoms. In cerebrospinal syphilis at the onset we find a marked diminution of intellectual functions. Moreover, the onset is usually acute. In initial paresis the onset is slow and insidious and the intellectual defect is less marked at first. In the first disease at the beginning there is severe headache, usually localized in the frontal region and aggravated at night. The headache is continuous and may last for weeks. Headache, especially of this nature, is not encountered in paresis. The psychic symptoms consist of intellecutal inertia, profound apathy, somnolence, which is quite pronounced, and a special dulness in the facial expression. Such a picture is certainly different from that we see in initial paresis. Besides, there is never the optimistic carelessness and general exaltation in the motor and sensory spheres which are observed in the expansive form of paresis. An interesting feature worth mentioning is the fact that alongside of the apathy and loss of memory the reasoning power may be totally preserved, a fact which is not observed in paresis.

Cerebrospinal syphilis is usually accompanied by local symptoms. In the first place and very early, ocular changes, such as optic atrophy, contraction of visual fields, hemianopsia, etc., develop. Palsy of other cranial nerves, symptoms of spinal cord involvement, such as exaggerated knee-jerks, the toe phenomenon, ankle-clonus, changes in the sensations in the limbs, such as hyperesthesia or hypoesthesia, and symptoms pointing to the involvement of the sphincter of the bladder, are the local manifestations showing a simultaneous involvement of the cerebrospinal axis. In early paresis these symptoms are all wanting and the somatic symptoms are few in number.

The course of cerebrospinal syphilis is characterized by great variability and mobility of the symptoms, which become either exaggerated or ameliorated. In early paresis the course is very slow and invariably progressive. The antisyphilitic treatment has a remarkably rapid effect on the symptoms of cerebrospinal syphilis. The psychic as well as the local symptoms rapidly improve and even disappear. Such a course of events is not observed in early paresis. To sum up, we may say that the richness of symptoms in syphilis is such that with a minute analysis it is possible in almost every case to reveal some particular feature indicative of the existence of a localized focus in the brain and in the spinal cord. The incomplete, unequal and regressive character of cerebrospinal syphilis is different from the global and progressive character of paresis. Finally, the variability and capriciousness of the symptoms are typical of syphilis.

There are two other affections which sometimes present diagnostic difficulties in differentiating from early paresis. They are alcoholism and chronic lead intoxications.

In alcoholism there is always present a history of the use of alcohol during a long period. Besides, the association of tremulousness of the hands, various paresthesias in the extremities, cramps in the calf-muscles, and the characteristic facies are not observed in the initial stage of paresis. The alcoholic subject usually suffers from hallucinations of terrifying nature which become accentuated at night. He usually appears brutal and stupid, but not demented. The paretic in the early stages presents a reverse condition. The alcoholic appears sad and preoccupied, the early paretic indifferent and apathetic. The alcoholic usually becomes delirious. In early paresis delirium is a great rarity. If an alcoholic develops expansive delusions they have to be brought out and can be ascertained only on a skilful questioning of the patient. The paretic is eager to speak of them and does it unsolicited.

The early paretic usually has no special changes of his speech, but if he develops them early, the speech is ataxic, full of the repetition of syllables and words. The speech of the alcoholic is merely embarrassed, thick and tremulous.

An important differential test consists in the withdrawal of intoxicants. As the manifestations of alcoholism depend on the toxic element consumed by the patient, they naturally present a progressive amelioration and may even totally disappear, if the patient is deprived of alcohol. In paresis, on the contrary, the symptoms remain and follow a gradually progressive course. Finally, in alcoholism no lymphocytosis of the cerebrospinal fluid is observed and both the Wassermann and the Noguchi tests are negative. In paresis both are positive and lymphocytosis is present in the majority of cases.

Undoubtedly there are cases of chronic alcoholism which especially by the psychic manifestations, the attitude and the facies of the patient may strongly simulate or mask an oncoming paresis. In such cases we sometimes experience great difficulty in making the proper discrimination. A prolonged and close observation under the guidance of the above-emphasized rules will enable one eventually to arrive at a definite conclusion.

Lead intoxication (chronic) presents a symptom-group designated as encephalopathy. The resemblance between lead encephalopathy and early paresis may sometimes be very striking, especially by the psychic manifestations. In both affections a neurasthenic state and mental attitude are observed suggesting an oncoming dementia, but in encephalopathy the dementia seems to dominate the entire situation from the onset. The array of physical signs, such as the cachectic appearance, difficulty of speech of gross nature, motor disorder of paralytic nature affecting chiefly the extensor groups of muscles, abdominal colic, severe headache, the blue line on the gums, frequent occurrence of interstitial nephritis with albuminuria, and arteriosclerosis are all symptoms which rapidly develop in lead encephalopathy and which are not found in the initial stage of paresis. Finally, the regressive evolution of symptoms after the appropriate treatment has been instituted and the patient had been removed from the toxic influence is one of the most characteristic differentiating evidences of the pseudo-paresis caused by lead intoxication. We have seen that in essential paresis the disturbances are fundamentally progressive.

MEDICOLEGAL CONSIDERATIONS

When paresis is in its phase of full development, when the patient develops delusions, when his morbid conduct is so evident as not to be overlooked by a lay mind, the patient's irresponsibility is obvious and any juror can readily be convinced of the mental incapability of a paretic. This is not the case with early paretics. By reason of gradually developing moral and affective perversions which announce the onset of the disease the initial period of paresis is the real medicolegal period.

It is then that misdemeanors are frequently misinterpreted and that the individuals are sent to prison. It is a well-known observation that early paretics not infrequently marry. The new life the patient leads in association with sexual excesses aggravates the condition. It is then that revelation made by the physician as to the preexistence of the disorder is viewed distrustfully by the patient's family. The latter especially we have great difficulty in convincing. The reason lies probably in the unconscious and progressive adaptation of the relatives to the equally unconscious and insidiously progressive deterioration of the mental faculties of the patient. As long as the patient automatically carries on his former habits and other acts concerning his usual occupation, he continues to live among his people. The lapses of memory, the digression in his conduct apart from his regular work, the changes of his character or sentiments, are all attributed to fatigue or absentmindedness. Notwithstanding the fact that the previously economical man commences to dissipate, that the sober man abandons himself to excesses, frequents undesirable places and associates with undesirable persons, and that the refined and educated man commits grave infractions of rules of politeness and surprises his friends with marks of indecent manners, early paretics are not infrequently permitted to have liberty of action and to continue in their responsible positions such as banking, teaching, engineering, conducting a train or a ship, etc., until misconduct occurs which results sometimes in the loss of lives. The psychologic automatism by virtue of which ordinary acts of life may be executed correctly for a long time is dangerously misleading in the early period of paresis. It is at this period that illegal acts and crimes are most frequently committed. Its recognition and proper interpretation is a matter of grave importance from a medicolegal point of view.

Twelve of my fifty-nine patients have been arrested on several occasions for petty crimes. Repetition of the misdemeanors was striking; the patients apparently had some difficulty in appreciating the enormity of their illegal acts. One of them walked out on the street almost nude. Another ordered an elaborate meal in a fashionable restaurant, refused to pay for it and struck the waiter when the latter presented the bill. Some of these patients committed theft of objects of the most insignificant nature and carried them away with most astonishing lack of precaution against being caught. For example, one of them walked into a dry-goods store, picked up a bundle in the presence of salesmen and walked out. In spite of this evident abnormality of the act it was difficult to convince his wife and his mother that the man was developing dementia paralytica. Fraud, forgery, abuse of confidence, assault, exhibitionism are all apt to be committed by a person with commencing paresis.

It is evident that civil capacity and legal responsibility should be considered as having no existence as soon as the earliest signs of paresis begin to make their appearance. Alterations of affective faculties, no matter how slight they may be, deserve to be viewed more seriously than their superficial appearance indicates.

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Sociologic Aspect of Insanity and Allied Defects.—A feature of imbecility not emphasized by humanitarians is the physical suffering entailed throughout life to the individual. Mental weakness implies low vitality with invited disease and chronic invalidism, the prevention of which is legitimate.—Hubert Work in *Am. Jour. Insan.*

SEX INSTRUCTION IN SCHOOL

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About five years ago a teacher in one of the Cincinnati schools applied to the superintendent to have a woman physician give talks to her girls on matters of sex. The request was an unusual one (at least it was at that time) though, unfortunately, the conditions that led to it are not uncommon. The school is in a slum district. The pupils had the usual qualities of American children; they were mostly pleasant, wide-awake and the like. The bad feature presented was the low moral tone. Not alone were there frequent manifestations in words and acts that betoken the impure mind, but also not a few among them were known to be immoral.

The children constituted the highest two classes in the school, the grades belonging to the intermediate or grammar school. They were from 12 to 16 years of age. The number of older pupils was probably due to the character of the neighborhood, that is, the presence of factories and saloons and many families of a low grade of morality.

The result of this application was a course of sex instruction given to both girls and boys by Dr. Nora Crotty and myself. Dr. Crotty gave fifteen short talks to the girls on cleanliness, character, heredity, anatomy of the pelvic organs, the menses, reproduction in plants and animals, infectious diseases, and womanhood and motherhood. I gave three talks to the boys and girls together on hygiene, habit and alcohol; and a talk to the boys alone on the origin of life.

The account of this course of instruction and my talks in full are given in a book of mine,[1] which appeared a few years ago. I wish now to speak only of the results of the instruction.

First, the atmosphere of the schoolroom became altogether different. The children were more cleanly. There were no more furtive smiles, secret messages and clique-forming. The girls had a new sense of self-respect, and demanded respect from others, which had been sadly lacking. A striking fact was that the boys would have nothing to do with a new boy, and cut his acquaintance altogether, because he tried to pass around some obscene literature. Hitherto free circulation of this kind in the class among both boys and girls had been one of the sore trials of the teacher. All the children entered into new confidential relations with their teachers.

The influence of the instruction was also felt outside of the schoolroom; the children carried that influence with them. The girls seemed to watch over the girls of the lower grades. In a number of instances, by their reports to the teacher, they tried to keep younger girls from getting into trouble. The children showed their influence, too, in the disappearance of vile writing from toilet-rooms and elsewhere, which had been a source of great annoyance in this school, as it is in many others; and it did not reappear in the years that followed.

Possibly the greatest change in the children was noted in their own homes. Many parents, mostly mothers, came to school to thank the teachers for what had been done for their children. A father came to thank the teacher for, as he said, saving his daughter.

1. Zenner, Philip: Education in Sexual Physiology and Hygiene, Cincinnati, 1910.

The teacher also observed that the girls stopped going to places that had a corrupting influence.

Great as were the benefits to the children at the time, the important question is, Did the instruction have a permanent influence on their lives? To obtain as definite an answer as possible to this question I requested the teachers to ascertain the condition of those children at present, and it is because of the results of their investigations that I am making this report.

The two teachers of these classes, a man and a woman, were noble-hearted, whole-souled and deeply interested in their pupils. They have kept somewhat in touch with the children since those school days and they believe that they have their confidence so fully (this confidence had been especially given to them after the course of sex instruction) that they have been able to read deeply into their hearts and can give a true report of their thoughts, habits and lives.

The investigation was made four and a half years after the sex instruction had been given. The larger number of the children of those days are now young men and young women; some are in various occupations; a few are in college; not a small number are married.

The teachers succeeded in finding and learning the present state of from one-third to one-half of their number. The benefits from the course of instruction noted at the time have continued to a large extent; so far as these years have told us, they are lasting.

The teacher believes that the girls, with one exception, have lived clean lives and kept pure minds. As was to be expected the report of the boys is not so favorable; but, especially considering their history and environment, the number with good habits, clean lives and pure thoughts is remarkable. They make a much better showing than does the average of young men.

As in their school days, so, also, in the following years they have carried the good influence with them. They have been missionaries for the cause. They try to impart to others the lessons which were given them. They often speak of this course of sex instruction and say that they wish others could also have heard it.

There is scarcely any other result of the instruction more valuable than this, that the children should have become the protectors and guardians of others, instead of, as is so common, their corruptors.

The history which I have given shows what school instruction may do, and I believe is a strong argument for universal sex instruction in school.

There are many who do not believe in sex instruction for the young. They wish thereby to delay the awakening of sexual life. But they fail utterly in their purpose. With rare exceptions the child acquires knowledge, usually early, from bad sources and of a perverted kind. This knowledge, acquired secretly and brooded over in secret, is the very kind to hasten the awakening of the sexual life and to exert a bad influence over it. On the other hand, if the child be properly instructed, if it be given such knowledge as satisfies its craving and supplies its needs, it has the opportunity to grow up with pure thoughts and with its mind dwelling little on sexual matters, so that the awakening of the sexual life is rather delayed than hastened.

Again, there are many who believe that sex instruction should be given in the home and not in school. It is true that the right instruction at home is the best the child can have and that none other can take its place. The parent should know best the child's needs and how to fill them, and, furthermore, this instruction, rightly given, is likely to give the child such confidence in its parent as will insure its future safety. This is no light matter. The young are constantly being contaminated by the young. A single child may ruin a whole school, but if one of the number should make an utter confidant of its parent this harm might be largely averted.

It is usually the mother who teaches her children, but when the father thus teaches and gains the confidence of his boys he may be an untold blessing to them.

Does it follow that, because home teaching may be of inestimable value, there should be no sex instruction in school? Surely not. There are to-day few parents who thus teach their children, and still fewer who do it well. While this number is increasing it will remain a comparatively small number, at least in our generation. So, if there be nothing else, the great mass of children will receive no right sex instruction. The wide-spread immorality among them, the grave menace to mankind of social disease because of which the great need of sex instruction has been so acutely felt, will not be lessened appreciably by that instruction if it be limited to the few who receive it at home. Nor is this a matter of indifference to this favored few. There is no greater life influence than the beliefs, sympathies and actions of one's associates, and children who have been rightly instructed at home in many instances will have their lives marred by those who have not received such instructions.

Even though sex instruction in school may mean so much we must still pay some heed to those who object to it. Undoubtedly the teaching may do harm. The mode of teaching may be such as to influence the child unfavorably rather than favorably, or the facts or ideas imparted may be such that the parents may rightly object.

There should be prepared and competent teachers for this instruction. The time may come when they will be prepared by normal schools and universities, but for this we have long to wait. In the meantime the aim must be to have teaching done which can do only good and not harm.

A method has occurred to me by which possibly this object can be attained. It applies to class instruction, but the greater part of such teaching that need be given in school can be given in the class.

The lesson in each instance should be a prepared one. The teacher, whether school teacher, physician or any other, should recite it to the assembled parents, with possibly the superintendent, a physician or other supposed expert in the audience. Only if it be satisfactory to this gathering should the lesson be given to the class.

Such a procedure would have various advantages. It would be a reasonable assurance that the teaching would do no harm. It would remove the antagonism of the parents to such instruction, which is now its chief stumbling-block. The teacher might receive suggestions from his audience which would help him to make the lesson more valuable. Finally, the lesson might be a great source of instruction to the parents, often enabling them to teach their children rightly at home. The method might have the drawback of calling the child's attention to the subject before the lesson is given, or of leading it to dwell unduly on it, but this should be avoided by care and tact on the part of teacher and parents.

To many the public discussion of sex matters is distasteful; and it is not without its possibilities of harm. There is but one justification for bringing the subject

into the lime-light—the pressing danger which silence has brought with it. The great menace of social disease has compelled the medical profession to discuss the matter with the people, to bring knowledge to them which will arouse them to action, lest it deteriorate the whole human family. If, however, sex instruction in school accomplishes what is hoped from it through the knowledge it imparts and the high ideals it creates, and greatly lessens sexual vice and sexual disease, there will be no need of constantly bringing these matters before the public, which will be another great gain to the credit of sex education.

INVOLVEMENT OF THE OVARY IN EPIDEMIC PAROTITIS

WITH A REPORT OF TWO CASES

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Although text-books in general mention the fact that involvement of the ovary is an occasional complication of epidemic parotitis, actual cases are apparently so infrequent as to have escaped the observation of many practitioners. Osler, for example, Flint, Kelly and many other authors of like wide experience state that although it may occur, it is extremely rare, an opinion also voiced by Hutinel,[1] who in his discussion of mumps and its complications cites but two actual cases.

Jules Comby, in his classical account of this infection,[2] has been able to collect records of but five instances in which this complication has been definitely reported (Rizet, two patients, one aged 29, the other 32; Meynert, patient aged 16; Boutillier, patient aged 6, and Vogt, patient aged 11).

Among other instances which I have been able to find in the relatively recent literature is that reported in 1853 by Meisnhardt, who had observed the condition in a girl of 16. This case, however, admits of some question because of the somewhat superficial method of determination and also because an abscess formed, supposedly in the ovary; this was opened and drained, and recovery followed. Inasmuch as this is the only instance reported in the literature in which metastatic pus formation took place in the ovary, although several instances in which suppuration has taken place in the male sexual gland are recorded, Meisnhardt's case cannot be definitely accepted, and the possibility of a concurrent appendicitis or salpingitis is suggested.

A. Snead[3] reports a probable case in which it was asserted that there was uterine as well as ovarian involvement. In 1852 Fisher[4] records a case in a girl of 17 years in which the left ovary became involved eight days after the primary onset of the disease. McNaughton also quotes Weil as reporting a case in a girl of 10 years.

Since McNaughton's last discussion[5] of this subject in the course of which he records an additional case in a girl of 18, little concerning the complication appears in the literature, and search of the *Index Medicus* after this date shows no new cases. This, taken in consideration with the relatively few instances previously placed on record would apparently indicate that the complication is, indeed, of great rarity; yet Troitsky,[6] in a study of an epidemic of thirty-three cases of mumps occurring in a group of young girls, found the complication present in thirteen instances. Judging from a translation of Troitsky's article, however, a possibility of mistaken diagnosis in at least some of his instances would seem likely on account of the uncertain methods of diagnosis, which necessarily could be applied only in the young children of his group (from 9 to 15 years).

Renon,[7] in reporting a case in a girl of 14 years, calls attention to the difficulty which may occur in the differentiation between this complication and appendicitis occurring in mumps. This possibility is perhaps further illustrated by Case 3 in Bunts' discussion,[8] "Parotitis Complicating Appendicitis."

For the reason of this apparent infrequency and because of the possibility of diagnostic confusion, I wish to place on record very briefly the following two instances which have occurred in my private practice:

CASE 1.—The patient was a healthy multipara aged 28 years. The parotitis was unilateral, confined to the left side and not very marked. The chief secondary involvement was of the submaxillary gland on the same side. This case was characterized throughout by its high temperature which was associated with slow pulse (temperature of 104 with pulse of 100), lack of prostration and by the fact that seven days after the swelling of the salivary gland the ovary on the same side became enlarged, very painful and extremely tender, so much so that an initial diagnosis of salpingitis with ovarian tumor was entertained. This instance was further complicated by an old mitral endocarditis, the symptoms and signs of which became markedly exaggerated during the course of the infection.

The severe ovarian pain subsided somewhat after two days, and was followed by a menstruation ten days before its normal occurrence and rather more profuse than usual. At the conclusion of this flow the ovary was found much reduced in size and tenderness, though still painful and enlarged.

This patient has now been lost sight of, but she did not become pregnant during the five subsequent years, during which time she was under occasional observation.

CASE 2.—A married nullipara, aged 24, developed a double-sided epidemic parotitis of moderate degree. The temperature did not at first exceed 101 F., with a proportionate pulse-rate, and the patient was with difficulty persuaded to remain in the house. Five days after the appearance of the parotitis she was acutely attacked by excruciating pelvic pain on both sides. Local examination showed both ovaries to be enlarged to masses the size of a large hen's egg, exquisitely tender and very painful. The temperature had now reached 103 by mouth, and a proportionate pulse-rate was present. Two days later both mammary glands became greatly swollen, red, tense and very painful, the nipples became inflamed and the weight of the unsuspended breasts was so great that the patient was obliged to have them supported by dressings. Bandaging and the use of cold compresses caused rapid subsidence of the mastitis, and after one month's time the patient was entirely well.

This woman has since remained under occasional observation for over six years. Her menstrual epochs have remained regular, painless and entirely natural, she has presented no symptoms of ovarian disease and local examination discloses no abnormality, though both ovaries are easily palpable. She has not become pregnant, but this may be due, not to a hypothetic ovarian atrophy such as might from analogy be expected to occur as a sequence of so marked ovarian inflammation, but to the fact that her husband presents a case of incompletely treated syphilis. It is noteworthy, however,

1. Hutinel: Med. Press and Circular, 1911, xci, 54.
2. Comby, Jules: In Twentieth Century Practice of Medicine, xiii, 583.
3. Snead, A.: Stethoscope and Virginia Med. Gaz., June, 1851.
4. Fisher: Mag. f. d. ges. Heilk., 1852, xv.
5. McNaughton: Pediatrics, 1903, xv, 263.
6. Troitsky: Vratch, 1902, I, No. 15.
7. Renon: Bull. et mém. Soc. méd. d. hôp. de Paris, 1903, Series 3, xx, 1361.
8. Bunts, F. E.: Am. Jour. Med. Sc., 1904, cxxvii, 803.

that the breasts, which were formerly full, firm and well-developed, are now soft, atrophic and flabby.

When one considers the great frequency with which involvement of the testes occurs in mumps, as high as 50 per cent. in some epidemics (Servier), one cannot but be surprised that the sexual gland of the female so commonly escapes. Benjamin Bourgeois[9] and McNaughton believe this not to be the fact, but attribute the reported infrequency of the complication to the difficulties of diagnosis or to the fact that it is not searched for as a routine matter.

Troitsky intimates the same opinion; at least we may clear him of this accusation since in an epidemic of thirty-three cases he observed more instances of ovarian involvement than have been reported together by all other observers before and since his study. Since having seen the cases above recorded I have been constantly on the lookout for the complication, and in a reasonably large material I have as yet not, again found it although I believe it to be doubtless more frequent than recent literature would indicate, perhaps partly because those most likely to see such cases, that is, family practitioners, are least likely to consider them of sufficient importance to record.

It is not unlikely that the protected location of the ovary within the peritoneal cavity is largely responsible for the infrequency of this metastatic involvement, for I assume it to be axiomatic that traumatism of the testes, even though very slight, predisposes toward the development of orchitis in mumps; this factor is practically eliminated in the female.

It is incorrect to assume generalities from so small a group of cases, but prognosis based on a study of all recorded instances of the complication would apparently fully bear out the statement of Trousseau that involvement of the ovary is not only a rare but also a benign complication of mumps.

All the recorded cases have developed in children or young girls except the two instances of Rizet and those reported by me. Again this is most likely accounted for by the greater frequency with which young persons, and especially girls, are likely to acquire the infection.

As in one of my cases, those occurring after puberty have resulted in temporary menstrual disturbances, most frequently a single, too early or too profuse flow; but as in my instances, permanent irregularities in this respect have followed in none. This point is probably of some importance in the question as to the possibility of permanent disease of the ovary following this lesion.

In none of the cases, save my own, has any statement been made as to subsequent fertility, and in no instance has a pathologic study of the diseased gland been made; none the less, if it is assumed, as seems justified, that the metastatic process is a simple inflammatory one, or as McNaughton assumes, a perioophoritis, and if the structure of the ovary is borne in mind, it seems unlikely that the complication should result in any serious interruption of ovarian function. This assumption would appear to be well founded from a multitude of studies on probably analogous inflammatory conditions of the ovary, even though considerable gross atrophy and fibrosis occur. This is in direct opposition to the effects of mumps on the male sexual gland, in which a sterilizing atrophy frequently appears when the complication is bilateral.

Although I am of the opinion that ovarian involvement in epidemic parotitis is more common than the literature of the subject would indicate, it is nevertheless infrequent. The complication is probably innocent and unlikely to cause either immediate or ultimate lesions of serious nature.

This report is made in the hope that it may stimulate others of wider experience in this infection to record instances of ovarian involvement in mumps so that a true estimate of its frequency and a more certain knowledge of its effects may be arrived at.

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9. Bourgeois, Benjamin: Graduation thesis, Paris, 1888.

ARTERIOVENOUS ANASTOMOSIS

SUCCESSFUL REVERSAL OF THE CIRCULATION IN ALL FOUR EXTREMITIES OF THE SAME INDIVIDUAL

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A controversy with one at such a great distance as Professor Coenen of Breslau must of necessity be rather unsatisfactory, yet I cannot permit his statements as to the impossibility of complete reversal of the circulation in a limb to pass unchallenged. Coenen and Wiewiorowski[1] set forth a great array of experimental work denying the possibility of resuscitatiing an extremity threatened with gangrene by arteriovenous anastomosis. And in addition to their experimental work, they reported one case clinically unsuccessful.

Following that publication, having done considerable experimental as well as clinical work on the subject myself, I collected and reported[2] all the cases of reversal of the circulation to be found in the literature — including six of my own — fifty-two in all. The evidence I gathered, while admittedly discouraging, had several points of interest, and, all things considered, held out hope of better things to come. Fifteen of the operations were successful, a percentage, small though it may be, that would seem to controvert Coenen's views as to the impossibility of the procedure on physiologic grounds.

But perhaps the most important point brought out in my paper, at least to my own mind, was the fact that these fifty-two operations had been done by thirty-one different men, a fact which at once accounts for a considerable number of the failures. Vascular surgery is as yet in its infancy and at present ranks as the most difficult and trying branch of surgery. No one surgeon in this or any other country has had sufficient clinical experience to justify a comparison of clinical with experimental work. And right here is where Coenen makes his greatest mistake. Many things are possible and easy of execution in the laboratory, but most difficult, or well-nigh impossible in the operating-room. The converse is equally true.

But if there is one thing that has been learned about blood-vessel surgery in the laboratory which can and must be transferred *in toto* to the operating-room, it is the technic. So when Coenen in his latest article on the subject of arteriovenous anastomosis[3] uses Luxembourg's case[4] and conclusions to support his contention as to the impracticability of the procedure, I think that he lays himself open to criticism as regards his fair-mindedness. No unbiased observer can read the story of Luxembourg's case without coming to the conclusion,

1. Coenen and Wiewiorowski: Beitr. z. klin. Chir. (Bruns'), 1911, xxv, 1.
2. Bernheim, B. M.: Ann. Surg., February, 1912, p. 195.
3. Coenen: München. med. Wchnschr., 1912, No. 29.
4. Luxembourg: Deutsch. Ztschr. f. Chir., 1912, cxiv, 323.

whether correct or not, that had there been more laboratory work the gross technical blunder committed—a blunder that certainly doomed the case to failure the moment it occurred—would have been avoided. The subcutaneous hemorrhage which occurred on the day following operation and necessitated opening of the wound almost certainly came from the site of anastomosis. But whether it did come from there are not, it should not have arisen—and this, too, could have been prevented by work in the laboratory, for perfect hemostasis is a prime requisite for success in this branch of surgery above all others. The wound infection, with its resulting sepsis and death four weeks after operation, needs no comment. Gross technical error in suturing the vessels, postoperative hemorrhage, wound infection, general septicemia—what more does a thrombus[5] need for its formation? What right had Luxembourg to come to any conclusions as regards arteriovenous anastomosis other than that his next case should find him better equipped to do the operation as it should be done? Thirty-one different operators performed the first fifty-two operations of reversal of the circulation, and I venture to say that most of these operations, or at least many of them, were as unfortunate as the operation just cited.

Once again let me call attention to the fact that judgment as to the possibility of this operation should be withheld until a sufficient number of operations have been done by surgeons especially skilled in vascular work to justify a really unbiased analysis. And the point next in importance to the skill of the operator is the difficulty of selection of suitable cases. Most of the cases of gangrene or threatened gangrene referred to me for operation have been seen so late in the course of the disease that a blood-vessel operation has been out of the question. And I hardly believe that our cases in Baltimore run any differently from those seen elsewhere. Nor can it be said that I am displaying any lack of enthusiasm or am "protecting my average," for I have even gone so far in doubtful cases as to dissect out the vessels, vein as well as artery, and examine them with a view to doing an anastomosis before resorting to amputation. Enthusiasm is a wonderful asset, but the most enthusiastic cannot rejuvenate sclerosed or thrombosed blood-vessels, and the sooner this is realized the better it will be for all concerned.

Further clinical evidence against Coenen is slowly but surely accumulating. Another successful case has been reported[6] by Davies of London. An end-to-end anastomosis was done between the femoral vessels for real gangrene of the left toes and foot and threatened gangrene of the whole lower limb. Six months after operation, the patient was able to walk with comfort, although he had had a chilblain of the left great toe since his discharge from the hospital, four months previously.

Davies feels about as I do in regard to this operation of reversal of the circulation. He says:

> It must be remembered that the number of patients on whom the operation of arteriovenous anastomosis for gangrene has been done is small, and that greater experience is required to determine the choice of case and of technic. The operation is not an easy one and the technic employed for controlling the hemorrhage and for uniting the vessels has varied greatly. There is no doubt that many of the cases operated on were not suitable on account of the state of the gangrenous part, the extent of the thrombosis, the advanced age or the bad condition of the patient.

As a conclusive point in proof of my contention that this operation, other things being equal, can be successfully performed, I wish to submit the latest report of one of my cases, previously described.[2] It will be recalled that arteriovenous anastomosis was performed on the left leg of the patient in February, 1911, and on the right leg in May of the same year, both operations being successful. The condition was Raynaud's disease and the patient a white woman 26 years of age.

Early in 1912, the same condition—pain, actual and threatened gangrene—necessitated reversal of the circulation in both arms. This was done on Jan. 23, 1912, in the left arm and on March 5, 1912, in the right arm, the last operation being urgently requested by the patient. Operation was successful in each instance, the brachial artery and vein being united by lateral anastomosis.

At the time of operation on the left arm, the little finger of that hand was partially gangrenous and amputation was postponed only in the hope that reversal might save it. Whether or not reversal did save it is a question, but the fact remains that the circulation improved in that finger immediately on conclusion of the operation and remained so good that a slough formed and the finger healed perfectly within a short time thereafter.[7]

During the course of each operation the only apparent abnormality noted was the rather small size of the artery, and the severity of its contraction on the slightest manipulation. As to technic of anastomosis, incision was made in vein and artery at right angles[8] to the direction of the blood-stream so that, owing to the cutting of elastic and muscular fibers, the lips of the wound so made sprang apart and tended to remain apart. With a single continuous thread the vessels were united, following which the vein was tied off securely above, proximal to the site of anastomosis. The artery was not further disturbed. Thus instead of one channel for arterial blood, the limb was given two and that the second immediately became efficacious was proved, to a certain extent at least, by watching the valves give way. In the veins of both arms the valves seemed quite close together, so that in each instance, one set was not more than one-half or one inch below the site of the suture. This first set of valves held tightly for a few moments, but only a few, then gradually gave. It took a little longer for the second set to give, but we definitely saw their destruction take place, the arterial stream seeming to batter down the cusp or cusps first of one side, then of the other. This phenomenon could be discerned by noting the admixture of arterial and venous blood. At no time was there ever a sudden rush of arterial blood down the vein as if a whole set of valves was suddenly destroyed.

Time was too precious to allow further study of this interesting "battle of the valves," but it is fair to assume, I believe, that if the arterial stream in a condition of lowered blood-pressure was able at once to overcome the resistance offered by the valves nearest the fistula, a higher, more normal pressure, such as occurs on the regaining of consciousness and subsequent health, would

5. A small thrombus formed at the site of anastomosis, in this case, another but larger one on the first set of valves below, distal to the fistula.

6. Davies, H. Morriston: Ann. Surg., June, 1912, p. 864.

7. I believe that the best results will be obtained from arteriovenous anastomosis where gangrene is only threatened. The operation should never be undertaken in the presence of a fulminating gangrene, although if it is in a quiescent stage operation may be considered.

8. Bernheim and Stone: Lateral Vascular Anastomosis, Ann. Surg., October, 1911, p. 496.

be able to force the valves further down in the course of the vein.

And that this latter contention is true is also proved, I believe, by the fact that a definite pulse and thrill can be felt at this date in both veins as far down as the elbows, and that the thrill can be heard almost to the wrist in each arm. The same gratifying phenomena hold true in both legs, where the pulse and thrill can be felt well below the site of suture and the thrill heard well below the popliteal space. The first anastomosis was done nearly two years ago, the last eight months ago.

The anastomosis in the left leg, my first case, was as reported an end-to-end with a one-inch transplant of a piece of vein, necessitated by an error in cutting the vessels. The three subsequent ones were all side-to-side lateral anastomoses according to the method developed in the Hunterian Laboratory of the Johns Hopkins University[8] in 1910. This method is simpler than the end-to-end, causes far less risk to the patient in case of failure and offers a greater guarantee of aid in case of success, in that the arterial stream is in no wise disturbed, but left to carry on the circulation as far as it can, the burden of carrying it further being left to the vein, which acts as an added channel for arterial blood.

The subject of these operations has been benefited in her left leg and both arms. The right leg still causes considerable pain at times, although a complete freedom from pain is hoped for in the future. She walks perfectly and uses her arms as well as ever. At present, Nov. 11, 1912, she is about to resume her occupation, that of floor superintendent in a shirt factory.

This is the first case to be reported in which a successful arteriovenous anastomosis has been done in all four extremities of the same individual.[9] And I believe that it goes a long way toward proving my contention that there is no physiologic reason why the blood-current cannot be successfully reversed in the extremities.[10]

My sincere thanks are due to Dr. Joseph C. Bloodgood through whose courtesy I was able to operate on and follow the above noted case.

9. I have reversed the circulation now eight times. Amputation was necessitated once. There has been no mortality.

10. Since this article was put in type I have done another reversal, my ninth case. The anastomosis is apparently successful, the patient's pain has been greatly relieved and amputation of his foot has been avoided—so far. The patient is still in the hospital, and as the operation was done only one month ago, it is too early to come to a definite conclusion as to the definite result.

EXPERIMENTS ON THE CULTIVATION OF THE VIRUS OF POLIOMYELITIS

FIFTEENTH NOTE *

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It has not hitherto been found possible to cultivate the virus, or etiologic cause, of epidemic poliomyelitis outside the animal body. Flexner and Lewis[1] noted that when a Berkefeld filtrate, prepared from the infected nervous system of the monkey, was mixed with ascitic fluid and the mixture incubated a turbidity arose; but they could not determine that the turbidity was caused by multiplication of a living microorganism. Only the original mixture, and not the subcultures, was capable of infecting monkeys.

Recently the efforts at cultivation of the virus have been resumed. Encouraged by the cultivation of the spirochetes by Noguchi we concluded to apply the methods worked out by him[2] to the investigation of poliomyelitis. Since the results achieved so far are of quite a different order from those obtained previously, we shall describe them briefly here.

The virus belongs to the class of filterable organisms and passes readily through Berkefeld filters (V and N). Up to the present it has not been rendered certainly visible, although we now know that "filterable" and "ultramicroscopic" are not equivalent terms.

We have employed for our experiments tissues from the brain and spinal cord of human beings who have died of epidemic poliomyelitis, and of monkeys the subjects of the experimental disease. Part of the tissues had been preserved for many months in 50 per cent. glycerin solution and were free from ordinary bacterial contamination, as were the fresh tissues.

The cultivations have been conducted both with Berkefeld filtrates and tissues in substance. The culture mediums consist, first, of sterile, unfiltered ascitic fluid or of brain extract to which fragments of sterile rabbit kidney and a layer of paraffin oil have been added, and of these plus 2 per cent. nutrient agar-agar in proportions of 1 to 2. The first mediums permit of a slow growth not visible to the naked eye, while the second (which are unsuitable for obtaining the initial growth) yield, after several days, visible minute colonies clouding the tubes. The cultivations are conducted under anaerobic conditions, and the colonies do not ascend to the summit of the deep layer of solid medium.

The minute colonies are composed of globular or globoid bodies, averaging in young cultures 0.15 to 0.3 micron in size. The bodies appear in a variety of arrangements: single, double, short chains and masses. Often they appear embedded in a material of different refractive index. In older cultures certain bizarre forms have been noted. The cultivated bodies stain a pale reddish violet in Giemsa's solution, and bodies of identical appearance have been demonstrated by Noguchi, also with Giemsa's solution, by a specially devised method in films prepared directly from the nervous tissues.

Monkeys have been inoculated with the cultures. Two series of inoculations have been made and a third series is in progress. Cultures from human tissues in the third, and from monkey tissues in the fifth generation have caused typical experimental poliomyelitis in the monkey. The findings at autopsy and the microscopic appearances of sections of the spinal cord, medulla and intervertebral ganglia were characteristic of the disease. From the nervous tissues of these animals other monkeys were successfully inoculated and pure cultures recovered.

The third series of experiments in progress consists of inoculations of later generations of the cultures, the object of which is to exclude the carrying over, with the cultures of the globoid bodies, of a quantity of the original virus sufficient to cause paralysis in the inoculated monkeys. This effect of the accidental carriage of the virus is more likely to arise in connection with the highly virulent "monkey" strain than with the relatively weak human strain, although it is perhaps not wholly impossible even with the latter.

* From the Laboratories of the Rockefeller Institute for Medical Research, New York.

1. Flexner, Simon, and Lewis, Paul A.: Epidemic Poliomyelitis in Monkeys, THE JOURNAL A. M. A., Jan. 1, 1910, p. 45.

2. Noguchi, Hidéyo: Jour. Exper. Med., 1911, xiv, 99; 1912, xv, 90; 1912, xvi, 199, 211.

THE SERUM TREATMENT OF TETANUS AFTER SYMPTOMS HAVE DEVELOPED

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That there still remains some doubt as to the value of antitetanic serum after tetanus has manifested itself is evidenced by the paper of Newberger[1] as late as last July, in which the statement is made that "when tetanus has set in, the value of antitoxin may be questioned."

From time to time reports of cases in which unusually large doses of the serum have been used with apparent good results, have been published in the journals. Strock[2] of Camden, N. J., in 1907, after relating an experience extending over six or eight years with small doses and a mortality of 100 per cent., reported five cases treated with very large doses and a mortality of only 20 per cent. Strock expressed the opinion that this was not a coincidence and attributed his latest success to the much larger doses used. Livermore[3] of Memphis, Tenn., in 1907 spoke of a patient who died probably because not sufficient serum was available, and advised giving large doses. In 1910 Caffrey[4] of Milwaukee reported one case in which 112,500 units were given in eight days with recovery. He believed that this patient would have otherwise died and recommended great quantities of antitoxin. In February, 1912, Young[5] of Valparaiso, Ind., reported three apparently hopeless cases in which large doses were used, and followed by recovery, one patient, a boy, received 150,000 units and another, a man, 220,000.

During the present year a patient under my care at the Ellis Hospital received, between April 26 and May 15, 587,500 units of tetanus antitoxin obtained from the state laboratory. The diagnosis was based on a history of the child, a girl, 14 years old, having stepped on a nail about one month before admission (confirmed by finding the scar of a punctured wound at the base of the left great toe), and on the physical examination which showed trismus, neck rigidity, rigidity of extremities and pain on palpation of flanks and abdomen. Spasms were present.

The dose given is apparently a record one and shows, if not the value of large doses, at least tolerance to such dosage since the patient recovered.

Two symptoms probably attributable to the serum were noted. May 15, the day on which the last injection was made, the left hand became swollen and there appeared a mild urticaria. This rash and the temperature, which rose, shortly before the eruption developed, to a point not reached since the second day after admission and assumed an almost septic type, were attributed to the serum, and treatment was discontinued. Three days later the temperature had reached normal and convalescence rapidly followed.

In reviewing the clinical notes of the case I find records of a papular rash, May 2, which was still present May 3. The last note of spasm was under date of May 6, but there is a further note, May 10, reporting the patient as comfortable with no twitchings or spasms on that day.

A RAPID METHOD FOR CELLOIDIN SECTIONS

MAURICE BUCHSBAUM, B.S., M.D., CHICAGO

Herxheimer's[6] quick celloidin method takes twenty-four hours. The tissues are fixed in formaldehyd solution or alcohol, and then placed in pure acetone in the incubator at 37 C. (98.6 F.) for from thirty minutes to one hour. This is followed by thin celloidin for four or five hours, and thick celloidin for two or three hours. By Cullen's[7] method permanent specimens from frozen sections may be obtained by previous formaldehyd solution fixation in from fifteen minutes to three hours. This would be the method of choice if it could be employed advantageously in the examination of very soft and finely divided material, as uterine scrapings or epitheliomas from the meshes of which microscopic particles and cell nests are apt to drop out "as there is nothing to hold them *in situ* as when celloidin is used." Frozen sections do not stain so readily, and often become distorted in the handling. Nevertheless the freezing microtome has its field of usefulness when quick diagnosis is paramount over nicety of appearance. I do not offer my method as a substitute for this, but rather as an aid to the pathologist and surgeon to facilitate a histologic-pathologic diagnosis when pressed for time.

The principle of my method consists in shaking the specimen in contact with the fluid reagents. The agitation thus brought about within the fluid dislodges the air-bubbles confined within the meshes of the tissue and prevents the formation of a coagulation membrane, thus allowing the reagent to act simultaneously both centrally and peripherally. With the usual method the fixing and hardening is delayed because of the formation of a coating of albumin on the surface of the specimen; this coat of albumin then acts like an osmotic membrane, and the reagents penetrate slowly through it by osmosis.

The following are the steps:

1. Place small pieces of tissue, from 0.5 to 1.5 c.c., in 50 c.c. of a freshly prepared formaldehyd solution (liquor formaldehydi, 1 part, physiologic salt solution, 3 parts) and shake vigorously from one to three minutes.

2. Remove specimen into 30 per cent. alcohol and shake for thirty seconds. (In this the formaldehyd is removed and the hardening process begins.)

3. Transfer into 80 per cent. alcohol for one minute and shake for thirty seconds.

4. Transfer to absolute alcohol for five minutes, and shake for one minute.

5. Place in alcohol and ether for four minutes.

6. Transfer to Celloidin No. 1 for five minutes; shake one minute.

7. Place in Celloidin No. 2 for five minutes; preferably in incubator at 37 C.; shake for one minute.

8. Transfer to Celloidin No. 3 for ten minutes; shake for one minute then place bottle in incubator.

9. Blocking. Expose to the air for one minute on the block, then place in chloroform from three to five minutes.

10. Place in alcohol 80 per cent. until ready to cut. Stain as usual. The sections thus prepared stain beautifully with hematoxylin and eosin and keep permanently.

The whole process takes from forty-five minutes to one hour.

GANGLIONIC GLIONEUROMA OF THE OPTIC NERVE

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The ganglionic glioneuroma belongs to the rarer forms of nerve-tissue tumors and is found most commonly in the central nervous system and cord. The following case, however, is of special interest largely because of the unusual location and evolution of the tumor, which beautifully explain the clinical manifestations.

The history of the case, as given by Dr. C. S. Beebe, in whose practice it occurred and by whom the removal of the eye and tumor was performed, is as follows:

The patient, a girl aged 8, first began to show evidences of eye trouble at the age of 6. No examination was made by a physician at that time and the diagnosis of "some eye trouble" was the parents' own observation. At the age of 8, the child

1. Newberger, Charles: Tetanus as a Complication of Burns, Am. Jour. Dis. Child., July, 1912, p. 35; abstr., THE JOURNAL A. M. A., Aug. 3, 1912, p. 401.
2. Strock, Daniel: Tetanus and Antitetanic Treatment, Jour. Med. Soc. New Jersey, October, 1907; abstr., THE JOURNAL A. M. A., Nov. 30, 1907, p. 1876.
3. Livermore, G. R.: Antitetanic Serum Treatment of Tetanus, abstr., THE JOURNAL A. M. A., Dec. 14, 1907, p. 2031.
4. Caffrey, A. J.: Tetanus Successfully Treated with Large Quantities of Antitoxin, THE JOURNAL, Nov. 5, 1910, p. 1643.
5. Young, Simon J.: A Case of Tetanus with Recovery, THE JOURNAL A. M. A., Feb. 24, 1912, p. 549.
6. Herxheimer: Technik der pathologisch-histologischen Untersuchung, 1912.
7. Bull. Johns Hopkins Hosp., April, 1895, and May, 1897

contracted scarlet fever with rapidly developing exophthalmos and complete blindness of the "eye that was wrong." On enucleation of the eye, to which the parents now consented, an oblong tumor was found to occupy the position of the optic nerve.

Macroscopically, the tumor showed a well encapsulated semi-fluctuating growth, measuring 3 cm. in length and 1.5 cm. in width (Fig. 1). Microscopic examination revealed neurogliar tissue forced apart by hemorrhages and edema which had occurred into it. It also showed typical ganglionic cells and nerve fibers. Examination of the eyeball itself showed absolutely no involvement (Fig. 2).

Fig. 1.—Gross appearance of tumor.

This tumor undoubtedly was congenital in origin and represents misplaced nerve-tissue. Its growth was characteristically slow until the febrile condition of the scarlet fever with its accompanying hyperemia stimulated the tumor into an active growth, which, together with the hemorrhages and edema, caused the rapidly increasing size of the tumor.

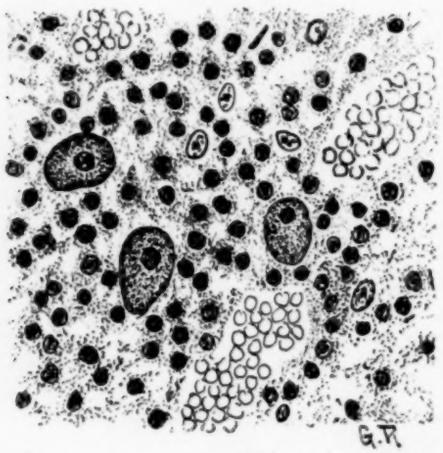

Fig. 2.—Cross-section, showing typical ganglionic cells.

While the location of the tumor naturally caused great damage to the patient, it was histologically a benign growth. Recurrence or involvement of the remaining eye has so far (now one and one-half years) not occurred. There is likewise no history of other members of the family having had similar tumors.

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Therapeutics

DIVERTICULITIS OF THE COLON

It is the object of this article to remind the physician of the possibility and not infrequent occurrence of an inflammation in the abdomen that is often overlooked, and consequently treated too tentatively for the safety of the patient. Though the physician generally recognizes appendicitis when it is present, still he is often puzzled by encountering on the left side of the body symptoms resembling those of appendicitis. It has been believed in certain cases that the appendix was located on the left side, and that abscesses due to inflammation of the appendix were sometimes found in the left side of the abdomen. More recent observations have demonstrated that at least a certain proportion of these cases of supposed left-side appendicitis were due, not to inflammation of the appendix, but to various pathologic processes occurring in the so-called diverticula of the lower portion of the colon.

A diverticulum may be encountered in various parts of the alimentary canal, as in the esophagus, the small intestine or the large intestine, but they are found more frequently in the lower part of the colon, especially in the sigmoid flexure, and sometimes in the appendix itself.

A diverticulum is a pouching or protrusion, more or less circumscribed, of the coats of the intestine. Little has been definitely determined about the etiology of this condition. The most that can be said is that for some reason a weakening of the coats of the intestine occurs, and that under the influence of some unusual pressure this protrusion or pouching takes place. It may include all the coats of the intestine, in which case the term "true" is applied to it; in others one or two of the coats of the intestine may be wanting, and then it is distinguished as "false." The latter variety is the more common. Some have believed that these diverticula occur more frequently along the mesenteric attachment of the intestine, but this is not an invariable rule, for not infrequently they are observed in the convex or free border of the intestine. In some cases they are found at the point where a blood-vessel enters the wall of the intestine.

Diverticula may be found on autopsy in persons who have never experienced any symptoms referable to their presence. Various pathologic processes may be set up in them, usually by the presence of food in a diverticulum of the esophagus, of intestinal contents in a diverticulum of the small intestine, or of fecal matter in a diverticulum of the large intestine. The pathologic processes vary greatly in character. There may be simply a catarrhal inflammation of the mucous lining, or there may be destructive changes, including ulceration and gangrene.

The inflammation may go on to perforation resulting in acute general peritonitis or the formation of an acute abscess or of an extensive indurated mass which may undergo resolution, or it may result in the formation of a chronic abscess. In the more chronic cases there may be inflammation with infiltration and thickening of the tissues which may go on to such an extent as to cause obstruction of the bowel. In some cases it is believed that a carcinomatous process may be developed on this infiltration. In some cases the extension of the inflammation may result in the formation of adhesions to other structures or of bands which interfere with the function of the intestine.

The symptoms resemble closely those of appendicitis, except that they are most frequently found on the left side of the abdomen instead of on the right side. There may be pain of greater or less severity, accompanied by a localized tenderness, and later an indurated mass may be felt on palpation. In the meantime there is usually considerable fever and acceleration of the pulse. There may be tenesmus or constipation.

In the chronic cases there may be more or less pain, soreness or tenderness and interference with the action of the bowels. If an abscess forms, it may discharge spontaneously through the rectum or bladder.

It is necessary, if possible, to distinguish this condition from malignant disease of the sigmoid flexure, and from inflammation of the left fallopian tube—salpingitis. McGrath[1] of Rochester, Minn., has recently emphasized the importance of not mistaking a simple inflammatory induration for cancerous degeneration. If the latter is believed to be present an unfavorable prognosis is given and operative interference is advised against, whereas if the simple inflammatory condition is recognized an operation may be curative.

1. McGrath, B. F.: Surg. Gynec. and Obst., October 1912, p. 429.

The treatment of this condition requires the exercise of good medical and surgical judgment. The general principles of treatment are not unlike those which must be observed in deciding on the treatment of an appendicitis. If the disturbance is not severe and is apparently unaccompanied by the formation of an abscess or by perforation, treatment by enemas of olive oil or of saline solution may assist in emptying the rectum and colon of their fecal contents, and this may be accompanied by a subsidence of the inflammation. At the same time cold, or preferably hot applications, either poultices or fomentations, may be applied over the seat of the pain.

If there are evidences of the formation of an acute abscess or of perforation, immediate operative treatment is demanded. This may consist in cutting out the diverticulum and drawing the edges of the wound together with a purse-string suture, and then placing a row of sutures over this, as recommended by Erdmann[2] of New York. In the case of chronic abscess it should be opened and drained.

If there is obstinate obstruction of the intestine, it may be necessary to make an artificial anus. After the recovery from this operation, the pathologic lesion may be removed by a second operation, and the ends of the intestine brought together with sutures. After this has healed and it has become apparent that fecal matter can be discharged in the normal way, the artificial anus may be closed.

DISTURBANCES OF THE HEART

(Continued from page 283)

STOKES-ADAMS DISEASE: HEART-BLOCK

Stokes-Adams disease, or the Stokes-Adams syndrome, is a name applied to a combination of symptoms which was described by Stokes in 1846, and had been observed by Adams in 1827. The disease is characterized by bradycardia and cerebral attacks, either syncope or pseudo-apoplectic or convulsive attacks.

To understand the phenomena of this disease, it will be well to refer to the first article of this series on diseases of the heart. Until 1893, when His described the bundle of muscle fibers which is now known by his name, the transmission of the cardiac stimulus to contraction was not understood. It has been found, by studying the pathology of Stokes-Adams disease, as well as by clinically noting with instruments the contractions of different parts of the heart, that these slow heartbeats are really due to interruptions of the impulse passing from auricle to ventricle through the bundle of His, and degeneration in this region is generally the cause of Stokes-Adams disease. The auricles often beat many times more frequently than the ventricles, even two or three times as frequently, and, of course, these auricular contractions are not transmitted to the arterial system, and the radial pulse notes only the contractions of the ventricles. The phrase that is used to describe this non-transmission of the auricular stimulus to the ventricles is "heart-block."

While this disease almost invariably has a pathology, cases have occurred in which no lesion of the heart could be found, but it generally occurs coincidently with arteriosclerosis, in which the coronary arteries are more or less involved and the arterial system of the brain may be diseased. It occurs more frequently in men than in women, and in them mostly after middle, or in advanced, life. The previous history of the patient has often disclosed syphilis.

2. Erdmann, John F.: Yale Med. Jour., February, 1912, p. 249.

The intermittency of the pulse may be regular or irregular, and may not be constant in the early stages of the disease, but when the disease is established the rate of the pulse may be reduced to forty, thirty, or even twenty beats a minute, and it has been known to be even less. When these intermittencies are regular, perhaps two beats to one intermittency or three beats to one intermittency are the most frequent types. When the auricles also beat slowly it is perhaps the pneumogastric or vagi nerves that are for some reason overstimulated and thus inhibit the heart's activity.

The attacks of syncope are doubtless due to anemia of the medulla, because of the infrequent ventricular contractions. This anemia of the medulla and of the brain may also cause an epileptic seizure, or a partial paralytic seizure without any apparent paralysis. It is probable, however, that in these cases there may be coincident arterial disease in the brain. These sudden syncopal attacks are likely to occur when a patient suddenly rises from a reclining posture, especially if he has been asleep. Many persons whose circulation is none too strong may feel faint on suddenly rising, but in a person whose pulse is slow and the circulation weak the danger of causing anemia of the brain by the sudden erect posture is much increased. Slight faint turns are of frequent occurrence with these patients; or the faintness may be so rapid and so intense that the patient may drop in his tracks. Venous pulsation in the neck is generally marked with these patients, showing an impeded contraction of the right auricle.

If the auricles are heard or found by instrumental readings to contract more frequently than the ventricles, the trouble is quite likely to be a heart-block from disease in the heart itself, in the bundle of His. If the heart is slowed as a whole, the trouble might be due to diseased arteries or pressure from a growth, a gumma, perhaps, or other brain tumor in the region of the pons Varolii or medulla oblongata; or a hemorrhage into the fourth ventricle, causing pressure, could be the cause.

The treatment of Stokes-Adams disease is unsuccessful. If general arteriosclerosis is present, that condition should be treated. Digitalis would seem almost invariably contra-indicated, although it is of value in extrasystoles without heart-block, or in conditions which are not Stokes-Adams disease; but if this disease was considered present, digitalis would probably do harm. Sometimes strychnin is of benefit.

Atropin has sometimes caused stimulation of the heart to more normal rapidity. Its benefit is generally only temporary, as most patients cannot take atropin regularly without having it cause a disagreeable drying of the throat and skin, a stimulation of the brain, and an undesired raising of the blood-pressure, to say nothing of its action on the eyes.

The only value of the nitrites is when the blood-pressure is high and the nitrite action is desired on that account.

Coffee or caffein often causes these hearts to become irritable; it certainly raises the blood-pressure, and therefore is not generally advisable. Both tea and coffee should generally be prohibited.

During the acute faint attack camphor is one of the best stimulants. Ammonia may be used, and alcohol is of benefit.

If syphilis is a cause of the condition, iodids are always valuable. If syphilis is not a cause and arteriosclerosis is present, small doses of iodid given for a long period are beneficial, although it may not much reduce the blood-pressure or decrease the plasticity of

the blood. Iodid is a stimulant to the thyroid gland, and therefore it is on this account valuable.

The greatest vasomotor stimulant to the heart that we know is thyroid secretion or thyroid extract. Theoretically thyroid extracts should be the treatment for a slow-acting heart. It sometimes seems of benefit to these patients, but it often causes such nervous excitation and irritability as to preclude its use. The dose of thyroid for this purpose would be small, about 3 grains of the dried substance once a day, or 1 grain three times a day. To be of any value the preparation must be good.

The usual precautions against overeating, overdrinking, severe physical exercise, sudden movements, overuse of tobacco, etc., should all be urged on the patient. The disease is sooner or later fatal, although the patient may live some years. The death is generally sudden.

It is understood that this disease must be separated from the condition of bradycardia inherent in a few persons who have a slow pulse throughout their life, without any untoward symptoms.

ARTERIAL HYPERTENSION

It is essential to study this condition, as it has a distinct relationship to the efficiency of the heart, and has a distinct bearing on the efficiency of the left ventricle, and therefore the systemic circulation. However perfectly the heart may act, it cannot properly circulate the blood without a normal tone of the blood-vessels, and of the arterial system in particular. Abnormal vasodilatation seriously impedes the circulation, and may cause shock and death. An increased tone of the arterial system means immediately an increased effort of the heart to overcome the resistance ahead. This soon means an increased activity and later an increased muscle development of the left ventricle. If a high blood-pressure persists, or becomes still higher, it then is a question as to how many months or how many years the left ventricle can stand the increased strain put on it. If the cause of the increased arterial tension is a fibrosis, sooner or later the heart will partake of the disease, and a chronic myocarditis will result. It is therefore evident that an abnormally high blood-pressure is of serious import, and must be studied, interpreted, prevented if possible, and diminished if advisable.

The various apparatus for determining the blood-pressure have already been referred to. No office is completely equipped without a reliable mechanism for determining the blood-pressure, and a portable apparatus is also almost necessary.

It is not the object of this article to discuss the danger of variations in blood-pressure in seriously ill patients, but to discuss the management of patients in whom hypertension is the only abnormal condition. In seriously ill patients dangerous falls of blood-pressure, as shown by repeated investigations, generally occur with a synchronous rise in the pulse-rate. Therefore, as the pulse-rate rises, the blood-pressure may be known to lower, and a dangerous rise means a dangerously low blood-pressure. It would be wise to take the blood-pressure of the convalescent patient more frequently, and not allow him to become ambulatory or return to his work until his blood-pressure has nearly or quite reached what was normal for him. If this was made a routine practice, fewer patients would suffer from weak heart and poor circulation after they had recovered from acute diseases. The blood-pressure would denote whether the myocardium had returned to its perfect capacity for work.

The blood-pressure varies with the age of the person, and is always lower in females than in males. It is probably rarely above 120 mm. of mercury in childhood and youth, and ranges from 110 to 130 in men and women from the age of 20 to about 40, with the average from 30 to 40 of perhaps about 125 mm. From the age of 45 on the blood-pressure generally increases, and as sclerosis advances, if the heart is competent, the blood-pressure rises to 140 or 150 mm., or even more. The blood-pressure in the female is anywhere from 5 to 10 mm. below what is normal for the corresponding age in the male. Any blood-pressure above 150 as an outside limit is probably always abnormal. This does not mean that it needs to be treated, or that it is necessarily wise to attempt to lower it. Blood-pressures higher than 150 become progressively serious, and anything over 200 is generally indicative of renal insufficiency. If there is marked arteriosclerosis, a blood-pressure reading may be very high, and yet not represent the actual pressure of the blood in the arteries; or it may indicate that the artery of the part cannot be collapsed.

As the blood-pressure depends on two factors, the intensity of the left ventricle contraction and the tone of the arteries, the condition of both must be interrogated and analyzed before it can be determined which is overacting or underacting. A too low blood-pressure is generally caused by insufficiency of the heart; it may be caused by loss of tonicity in the arterioles, or by hemorrhage.

Arterial hypertension may be divided into stages. In the first stage the arteries are healthy, but the tone, owing to muscular contraction, is too great. This stage has been called "chronic arterial hypertension" to designate the period at which there is probably no real sclerosis, and at which the production of sclerosis may be prevented or at least deferred. In the second stage the muscular coats of the arteries have become more or less hypertrophied, and degenerative changes have begun in the intima, with perhaps a beginning fibrosis of the external coat of the arteries; in other words, arteriosclerosis is present. A third stage may be recognized in which the fibrosis has far advanced, an atheromatous condition is developing or is present, and the muscular coat of the arteries is becoming insufficient; the heart can no longer increase the arterial tension, and the blood-pressure begins to be diminished. Also at this stage the heart is generally in serious trouble, and the circulation becomes progressively insufficient, with sooner or later left ventricle dilatation, pendent edemas, and possibly obstruction in some of the peripheral arterioles.

The causes are:

1. Products of protein metabolism, if these are abnormally increased or are abnormal in character. These products are abnormally increased by excessive eating of protein, by insufficiency of excretions (especially of the kidney excretion), and by increased general metabolism (as in pregnancy). These protein products are more or less abnormal in gout, in intestinal fermentation and putrefaction, and in any serious impairment of the digestive system. Such abnormal products are irritant to the blood-vessels and cause considerable increase in pressure, unless they are actual toxins, in which case the blood-pressure may be lowered.

2. The arterial pressure is raised by the blood containing a considerable amount of caffein, nicotin or other blood-pressure-raising substance. It is possible that an abnormal secretion of the adrenal glands may cause a continued high blood-pressure.

3. Cerebral stimulation or excitation will cause contraction of the arterioles and raise the blood-pressure. Such an increase in pressure may be due to nervous intensity, excitement, some forms of hysteria, and fear. It is typically caused by prolonged and active brain work.

4. Hard physical labor and sustained muscular exercise will raise the blood-pressure. Strenuous labor and hard athletic work, especially if competitive, and if it requires sustained effort, will cause high blood-pressure earlier than should normally occur in the individual.

5. Any serious infection or serious illness may be the forerunner of an early arteriosclerosis with a previous high blood-pressure. Sclerosis of the arteries may occur without much previous hypertension. This may occur in cases of hyposecretion of the thyroid, and in syphilis, although probably hypertension almost always precedes arteriosclerosis. If the hypertension persists, and especially if it is due to irritants circulating in the blood, endarteritis will probably sooner or later develop.

While hypertension is not a disease, while it many times should not be combated, and while a large amount of effort is expended to combat hypertension without accomplishing that end, still, hypertension many times causes symptoms. These symptoms are more or less troublesome if not serious, and as prolonged hypertension is a sure forerunner of more serious disease, a careful investigation of the causes of the hypertension should be made in every case, and the withdrawal or abatement of the cause and the modification of the food and life of the patient are absolutely essential. There can be no excuse for considering hypertension a condition unworthy of management. Such a patient can generally be improved; troublesome symptoms are generally removed or lessened; and undoubtedly circulatory health, if not actually life, is prolonged by such management. The exact value of treatment, physical or medicinal, in each case is another question, and can be determined by individualizing. Much good can be done by both means; sometimes both means fail. If physical and medicinal measures and the regulation of the diet and life of the patient fail to reduce the blood-pressure, there is a more serious cause back of the condition, generally a slow-going, latent, interstitial nephritis, if arteriosclerosis has not actually begun.

On the other hand, it is not intended in the above statement to declare that all patients with high tension should be treated either medicinally or physically, as it may be unwise in many instances to reduce the pressure. Such patients, however, are generally those who have some other condition or disease present besides the symptom of hypertension.

It should also be recognized that it is becoming universal with insurance companies to believe that a blood-tension above normal for the individual, even if his physical condition is otherwise perfectly satisfactory, will shorten his prospect of life. Arteriosclerosis, cardiac disease, apoplexy and chronic nephritis are all on the increase, and insurance companies believe that an abnormal increase in blood-tension is a forerunner of these ultimate conditions.

The symptoms of hypertension not noted by the patient are the inability to relax from business as readily as normal; an increased rapidity of doing the simple things of life, notably in eating; an increased stimulation from coffee, tea, alcohol and nicotin; a diminished ability to fall asleep readily, or to sleep without dreams and without turning and tossing in bed; an increased amount of urine (not always the case[1]) or at least an increased frequency of urination; an increased irritability, or an aggravation of any disagreeable trait which the patient may have had. The symptoms noted by the patient are a tendency to be short-breathed on slight exertion; a feeling of fulness in the head at times, especially when leaning over, or on any sudden movement; insomnia; slight waves of dizziness; and perhaps slight cardiac pains after an exertion that has added to the work of the left ventricle, which has been long acting against this increased resistance. Any of the last-named symptoms may send the patient to his physician, and the cause should be discovered. Many other little disturbances may send the patient to his physician, and this hypertension may be noted during the examination. To repeat, in any case of hypertension its cause must be sought and its management carefully decided on. The condition should not be neglected by the physician.

Unfortunately, the other side of this story is a troublesome one — the effect of the knowledge that he has hypertension on the man himself — and it is men with whom we are most frequently dealing in this condition. It is no longer of any use to ridicule the general knowledge that hypertension is a factor in life to be considered. Both business and professional men are now well aware that blood-tension is taken in most insurance examinations. It is new to them, and therefore they are the more inquisitive. In the second place, it is pretty close to their hearts, and a man is always more disturbed if he thinks there is anything the matter with his heart than if any other part of the body is at fault. Therefore he will not so readily forget that the blood-pressure reading is important as he will forget that the examination of the urine is important. Consequently, with the knowledge that his blood-pressure is abnormally high he becomes more or less introspective, even perhaps foolishly so, and will raise his blood-pressure by his own fear and anxiety. To meet this condition, which will little by little wear off as the subject becomes less of a novelty, the physician must minimize the importance of a slightly increased blood-pressure, but must still urge the necessity of a change of the man's intense life and unphysiologic eating, drinking and smoking to the prolongation of that man's years, give him no special treatment, see him only infrequently, and aid him in forgetting that his blood-pressure is somewhat high.

On the other hand, if the patient's blood-pressure is very high and the aortic closure is accentuated, we have no more right to tell him to forget it than we have a right to withhold from him the truth, if he had a damaged heart, or if we had found albumin or sugar in his urine. It means that such a patient should be under more or less frequent observation, and certainly something should be attempted to lower the blood-pressure. If it is not readily lowered, then active treatment need not be persisted in.

(To be continued)

1. Lawrence: Am. Jour. Med. Sc., September, 1912, p. 330.

There is But a Single Layer of Epithelium Between Us and Death.—I do not know whether you have thought of the importance of a single layer of epithelium to the human being, but the single layer of epithelium which lines the alimentary tract and the tubular glands is all that intervenes between the bacterial contents of the intestine and the venous and lymphatic circulation. As long as that single layer of epithelium is intact you are safe, but as soon as that single layer of epithelium is destroyed then a bacterial invasion of the veins and lymphatics begins and a dangerous condition supervenes.—C. B. Lockwood in *Clin. Jour.*

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SATURDAY, FEBRUARY 1, 1913

NITROGEN RETENTION IN NEPHRITIS

There is a consensus of opinion that organic nitrogenous substances tend to accumulate in the blood in nephritis. The relation of this non-protein or "residual" nitrogen of the circulating fluid to so-called uremia and the prognosis of disease involving kidney defects is not so clear.[1] It is by no means convincingly shown that an increase in the non-protein nitrogenous components of the blood, which are commonly looked on as metabolites retained in the circulation owing to the impaired excretory powers of the organism, always attends the clinical manifestations of uremia or allied eclamptic states. An illustration of the possible importance of positive knowledge in this field may be cited from the field of kidney surgery. The advisability of the removal of one kidney for surgical reasons must depend on accurate information of the functional efficiency of the remaining renal organ. There are, of course, various methods of prognostic functional examination of the kidneys now in vogue. Blood analysis, however, must be considered as an additional possibility, the data from which can be intelligently utilized only when experience has furnished suitable normal standards. Simple methods are further a prerequisite for any wide-spread application of a diagnostic procedure, although in these days of special laboratories this requirement need not receive too great emphasis.

In any critical analysis of the data for blood and urine in cases of kidney involvement it should now be borne in mind that recent investigations have served to emphasize more clearly than ever before the variations in the types of nephritis that may occur. The studies of Schlayer and his associates in Germany and of Pearce and his collaborators in this country[2] among others have served to differentiate the nephritides in which the glomeruli, the tubules, or both of these anatomic elements of the kidney are involved. Morphologic and functional changes have been correlated in clinical experience and experimental trials. Poisoning with uranium salts and chromates, for example, provokes changes referable to the tubules; with cantharidin or arsenic, on the other hand, alterations of the glomeruli are brought about.

Since these experimental forms may be looked on as representing characteristics of illustrative types of acute nephritis, Folin, Karsner and Denis[3] have made a study of the nitrogen retention in some of these conditions, employing the newer colorimetric methods for nitrogen determinations in the blood. They have discovered that distinct accumulation of non-protein nitrogen in the blood occurs in many cases. The accumulation is marked in uranium nephritis which involves both tubules and glomeruli, but primarily the former. Chromate nephritis, which involves almost exclusively the tubules, produces only moderate retention of nitrogen. Cantharidin nephritis, which involves both tubules and glomeruli, the latter more severely than does uranium, produces a marked accumulation of nitrogen, beginning early and persisting for a considerable period. Thus it will be observed that anatomic study shows the glomerulus to be distinctly involved in the two forms of nephritis in which accumulation of nitrogen in the blood is most pronounced. The findings indicate that although pure tubular involvement produces only moderate accumulation, the additional involvement of the glomerulus is extremely important in leading to a retention of nitrogenous waste products. The quantities of accumulated non-protein nitrogen in the blood and tissues are not large when compared with the total intake or elimination of nitrogen, and this degree of accumulation cannot be demonstrated by the ordinary methods of urinary metabolism investigation. Here, however, is a beginning in the direction of blood examinations which may lead to fruitful fields.

1. Compare Strauss: Der Reststickstoff in seinen Beziehungen zur Urämie und zur Prognose von Nephritiden, Deutsch. Arch. f. klin. Med., 1912, cvi, 219.

2. A review of the literature has been published by Pearce, R. M.: The Problems of Experimental Nephritis, Harvey Lectures, 1909-1910, Philadelphia, 1910, p. 17; also Arch. Int. Med., February, 1910, p. 133

3. Folin, O., Karsner, H. T., and Denis, W.: Nitrogen Retention in the Blood in Experimental Acute Nephritis of the Cat, Jour. Exper. Med., 1912, xvi, 789.

SURGERY FOR CRIMINAL TENDENCIES

An interesting after-development in a surgical case which attracted much attention about four years ago has just occurred. A prisoner serving a long sentence in the prison at Dannemora, N. Y., was pardoned by Governor White on representations which seemed to make it clear that he had been cured of his criminal tendencies by a surgical operation. The prisoner was comparatively young, but from boyhood had been noted for his tendencies to appropriate the property of others, not only by taking, but by clever frauds and by forgery. When given this long term he had carefully studied his own case, it was said, and had found that at the age of about 14 he had been struck on the head with a fence-picket. The result was a fracture of the skull for which the subsequent prisoner had to stay for a long time in the hospital. Before this, according to the

story as detailed by the prisoner, he had been an exemplary youth. After this he became morose, sullen and a thief, and stole from every one. Becoming convinced that his criminal tendencies were due to this injury to his head, he sent for the family physician who had treated him, not for the injury, but some years afterward.

He set his case clearly before the physicians whom the family physician called in consultation, and finally convinced them that perhaps there was something in his story. He had been reading books on criminology and was quite sure that the root of the evil was a physical defect and not a moral perversion in his own case. He represented that often when he took things he had no need for them; that even the large forgery for which he was under sentence had been committed at a time when he had no particular need of the money, and that there must be something else besides an ordinary tendency to thieving in his case. An examination of his skull showed an old thickening underneath the scalp at the point where he had been injured. Apparently this thickening might produce some pressure on the brain, and since he pleaded it seemed worth while to try at least to relieve any pathologic condition that might exist. The operation was done, the thickened portion of bone removed, and during convalescence the prisoner's character seemed to change. From being sullen and morose he became bright and cheerful, walked with firmer step, held his head erect and appeared to be a different man. It is not surprising then that a few months after the operation the governor was induced to set him free on parole, and there seemed to be every reason to hope that a useful citizen had been restored to society in place of the criminal that had been taken from it.

Unfortunately the arrest of the paroled prisoner during the first week in January of the present year, for a series of burglaries with regard to which the evidence is complete, seems to make it clear that the improvement was only temporary, or that the operation and his subsequent good conduct were steps in a scheme to secure his release from prison. The gang of burglars with which he has been working has been one of the most dangerous in western New York. Evidence seems to show that he was actually the leader and the inspiring genius of the gang. He has not been led astray into crime the second time, but he has actually been the perverter of others. It is just four years since his release, and for nearly a year he was under the surveillance of the police, who declared that he was leading an honest life. He seems to have been aware of their surveillance and of the fact that it had ceased, for almost immediately afterward began the series of burglaries which has finally landed him in prison again.

This result or something similar is of course no more than what might have been expected. There is no trustworthy evidence to show that perversions of moral character, independent of mental deterioration, result from pressure on the brain. During the Civil War a large number of injuries to the head by penetrating wounds of various kinds with subsequent recovery were noted, yet perversions of character followed in so few cases that they must be taken as representing coincidences and not consequences. Very severe injuries to the brain, as for instance in the famous crowbar case, have been followed by actual improvement of character rather than the reverse, although, of course, there is no more reason to trace a relation of cause and effect here than in the instances of deterioration. Without any injuries, men have been known to change from respected citizens to criminals or at least to violators of law. Even in cases of insanity following injuries to the head, moreover, favorable results from operative interference are very infrequent.

Sensational announcements of improvement in such cases after surgical intervention, like those that used to be made for various surgical procedures in epilepsy, need to be controlled by the subsequent history of the case. Immediate improvement in both sets of cases is usually rather mental than physical in origin, and while the possibility of improvement in certain severe cases justifies surgical intervention, successes reported before many years have tested their permanence are liable to produce false impressions.

ABSORPTION FROM THE STOMACH

The current views respecting the possibility of absorption from the stomach are somewhat conflicting. The more usual statement is that water is not absorbed directly from this organ; it is speedily discharged from the latter through the pyloric opening and then disappears from the interior of the intestine. Under ordinary circumstances, therefore, the delay of water alone in the stomach is so brief that there is scarcely an opportunity for any considerable removal of the fluid to take place there through the alimentary wall. The evidence for the absorption of salts is also debated, although it has been maintained that readily detectable compounds such as iodids, salicylates, sugar and even peptone may disappear in small measure through the stomach wall. Alcohol certainly can be absorbed directly from the stomach and it has been suggested that the presence of this solvent facilitates the absorption of dissolved substances by this path.

Several years ago Meltzer[1] made a noteworthy contribution to this subject. He demonstrated that after ligation of the pylorus the onset of the symptoms of poisoning with a drug like strychnin may be greatly delayed or even missing, when otherwise, that is, with unimpeded passage to the intestine, the same dosage would bring a speedy indication of absorption of the

1. Meltzer, S. J.: Jour. Exper. Med., 1896, i, 529; Am. Jour. Med. Sc., 1899, cxviii, 560.

toxic agent. It seemed apparent from such observations that the absorption of strychnin from the stomach is incomparably lower than from any other section of the alimentary canal.

The method of excluding the participation of the other portions of the digestive tract by ligation of a particular fragment in the way referred to may, however, place the stomach in a somewhat abnormal condition. This criticism applies also to other experimental methods such as the paralysis of the stomach by vagotomy. Alterations in the supply of blood and lymph, as well as local injuries induced by the experimental technic, introduce possible complicating factors of unknown importance. Ryan[2] has avoided these by conducting absorption trials on a miniature sequestered stomach surgically devised according to Pawlow's method. There is at present reason to believe that the phenomena taking place in a pouch of the stomach isolated in this way furnish a correct impression of the behavior of the rest of the organ in respect to absorption and secretion; and the method of study has already been widely applied to the investigation of all sorts of gastric problems.

According to Ryan, when strychnin salts are introduced into a sequestered miniature stomach which is detached from direct continuity with the rest of the alimentary canal and from which there is no possibility of escape of the contents into the intestine below or the pharyngeal region above, the absorption of poison from the gastric mucous membrane is much greater than is indicated by previous experiments based on other methods. If these findings are further substantiated and extended to other substances and more subjects, they will call for a revision of some of the current beliefs in regard to certain gastric functions.

2. Ryan, A. H.: Studies on the Absorption of Drugs from the Gastric Mucous Membrane, Jour. Pharmacol. and Exper. Therap., 1912, iv, 43.

CLOTHING IN THE TROPICS

The hygienic function of clothing is to serve as a protection against climate — heat, cold and dampness — and also against injury. Curiously enough, the forms of dress in use in different parts of the world are dictated by custom, fashion and religion quite as much as by the more immediate and obvious demands of health. Reforms in dress are exceedingly difficult to bring about if they run counter to any of the conventions just recited. When an American is transported from the temperate zones to the tropics, as is bound to happen with increasing frequency now that we have permanent interests in the hot countries of our insular possessions, the question of the most favorable clothing to withstand the new climatic environment becomes a pressing one.

Custom prescribes that the white man shall cover his body, and his insufficient skin pigmentation probably demands it. Aside from this, two fundamental requirements must be met by a suitable covering in hot climates. Shade must be provided against the sun, and the important function of removal of heat from the body by the evaporation of perspiration must be impeded as little as possible. These two features may be somewhat antagonistically served by garments which are not advantageously selected or adjusted. The temperature of the skin is liable to rise rapidly to heights above that of the blood if the body is exposed to the tropical sun.[1] This is particularly true when work is performed at the same time. A primary requisite, therefore, is some form of shading, either natural or artificial, which will counteract this. Obviously the rise of temperature will be most rapid under clothing which has a maximum capacity for heat absorption and a minimum capacity for the circulation of air to allow for evaporation of moisture. Black is well known to absorb much more heat than is taken up by white. Generally white will absorb the smallest amount of radiated energy; and white rabbits can live longer in the direct sunlight than those of darker hues.[2]

In view of all the conditions to be fulfilled, Professor Gibbs has well characterized the most desirable clothing as that which, in the sun, will cast a shade on the body without hindering the air circulation and heat radiation. The efficiency is increased if a color is used which will permit a minimum of heat absorption. The ideal condition, says Gibbs, is fulfilled by a large white umbrella lined with a shade of green that will be agreeable to the eyes. It is this type of protection that the native of the tropics has instinctively or deliberately adopted. The native hat in the Philippines is often so large that the wearer is thrown completely in the shade. The crown is supported some distance above the head. In many localities the entire costume consists of this hat, with the addition of short trousers or a loin-cloth.

In the case of foreigners decency requires more covering than this and the insufficiency of skin pigment may also strengthen the demand for further clothing. This will appropriately be white. In place of the heavy helmet often seen, large-brimmed ones of material light in color and weight should be substituted. They should be fixed up and away from the head to allow a circulation of air. The notion that a thick material will exclude injurious light rays which cannot be stopped by ordinary opaque material is now known to be without justification. The specifications for the other articles of apparel are fairly evident, thinness of texture and perviousness to air currents being essential. There are numerous underlying features of dress here indicated which might find an advantageous application in the clothing for the summer days of our temperate zones.

1. The facts here reported are based on the data of Gibbs, H. D.: A Study of the Effect of Tropical Sunlight on Men, Monkeys and Rabbits, and a Discussion of the Proper Clothing for the Tropical Climate, Philippine Jour. Sc., B; Philippine Jour. Trop. Med., 1912, vii, 91.

2. See Sunlight in the Tropics, editorial, THE JOURNAL A. M. A., Jan. 25, 1913, p. 284.

THE EMETIC ACTION OF THE DIGITALIS BODIES

The gastro-intestinal disturbances which frequently attend the therapeutic use of substances belonging to the digitalis series are disagreeable features in more than one way. Because of the nausea and gastric discomfort occasioned by their administration they upset the appetite and interfere with the orderly progress of the digestive functions at a time when a disturbance of the digestive process is extremely prejudicial to the success of treatment. Large doses of digitalis may give rise to vomiting. To these facts are due in large part the attempts which have so often been made to obtain preparations which still exhibit the cardiac action without any of these objectionable alimentary interferences.

The symptoms of gastric irritability and the related phenomena are commonly charged to a local irritant action supposed to be exerted by the members of the digitalis group directly on the mucous membranes of the stomach and intestine. At any rate this view is stated to be held almost universally with regard to digitalis and digitoxin, and somewhat less generally concerning strophanthus and amorphous strophanthin. The chief justification for associating the emesis and other gastro-intestinal disturbances which follow their therapeutic use by the mouth with a local irritant action on the gastric mucosa appears to lie in the fact that the digitalis bodies exhibit a decidedly irritant action after subcutaneous injection or application to the exposed mucous membranes of certain areas. The analogy here presented appears to have diverted attention from the possibility that the emetic action of moderate amounts of the different substances of the digitalis group might in part at least be of central origin. The latter is the more to be suspected because, as Hatcher[1] has observed, a smaller dose suffices to induce nausea and vomiting when injected intravenously or subcutaneously than when given by mouth. Indeed, emesis follows the intravenous administration of moderate doses of the digitalis bodies so promptly that not more than the merest traces of the drugs can be excreted into the gastro-intestinal canal before this action is induced. From this point of view it may well be asked whether these drugs do not act directly on a vomiting center.

Drs. Hatcher and Eggleston[2] have subjected the debated question to an experimental investigation at the pharmacologic laboratory of the Cornell University Medical College, New York City. The ingenious scheme of employing eviscerated animals for the tests made it easily possible to exclude the alleged local irritant action on the gastro-intestinal tract. Evidences of nausea, vomiting movements and the typical signs of emesis were easily elicited by the introduction of the drugs, proving conclusively that the emetic response can be obtained without the participation of the action of the digestive tube. The doses of the digitalis bodies required to produce the manifestations of vomiting in eviscerated animals are strictly comparable to those used therapeutically. The conclusion seems inevitable, therefore, that the emesis sometimes seen in man after the oral administration of therapeutic doses of digitalis bodies is due mainly, if not exclusively, to their action on the vomiting center in the medulla. The similarity of the behavior of the digitalis bodies in man to that observed in some of the laboratory animals leaves no ground for supposing that the mechanism of the emetic action in man is in any way different from that seen in them. The purgative action also appears to be of central origin. Hatcher and Eggleston point out that doubtless massive doses of the digitalis bodies may cause emesis by their direct irritant action on the gastric mucous membrane; but such results are obtained by introducing into the stomach amounts much greater than those used in clinical practice.

An important deduction from the work of Hatcher is that the mode of administration and the preparation have only a minor influence on the production of nausea by the digitalis bodies, and that this symptom indicates the beginning of toxic action and hence a point at which caution should be exercised. Instead of seeking for a form of the drug which will not produce nausea, or for a method of checking it, we should remove the cause by suspending the administration of the drug, or giving it in smaller doses.

1. Hatcher, R. A.: Am. Jour. Physiol., 1909, xxiii, 310.
2. Hatcher, R. A., and Eggleston, C.: The Emetic Action of the Digitalis Bodies, Jour. Pharmacol. and Exper. Therap., 1912, iv, 113.

THE HUMAN BODY AND THE CONQUEST OF THE AIR

Aeronautics, a familiar subject since the beginning of the twentieth century, is usually considered solely with reference to the ingenious modern devices and mechanisms which have made possible the aeroplane or the airship. One rarely stops to consider the peculiar demands made on the human organism in the field of aerial navigation and the physiologic requisites for successful conquest of the air by man. In ballooning the limitations are by altitude and its attendant involvement of respiration have long been appreciated. In the modern pursuit of aviation, however, this aspect is only one of many that involve the performance of the human machine in the air. Anatomic and physiologic considerations of themselves clearly teach that we cannot expect man (in comparison with birds) to fly by the efforts of his own musculature. Indeed, it is often overlooked that the capacity of birds for sustained flight in the air is dependent not only on their unique respiration and circulatory apparatus, but also on the ability of the latter to permit the tremendous expenditure of muscular energy that is requisite and is facilitated by a concentration thereof on the mechanism of flight, the wings.

The eminent Berlin physiologist, Professor Zuntz, has pointed out that the clew to the successful pursuit of aviation is to be sought, in the broadest sense, in the

domain of psychology.[1] Whether it be in flying in a balloon or in aerial propulsion with the aid of a motor, certain organs of the body are of preeminent importance, and their normal performance is indispensable for success. First of all, the sense organs are drawn into requisition; they enable the aviator to orient himself in space and to appreciate the position and movements of his body and its constituent parts. The data derived from these sensory impressions are invaluable. Very high altitudes must be reached before the disturbances of well-being occasioned by the rarefaction of the atmosphere are brought into play. One need only recall some of the features associated with the performance of the organs of sense to realize how largely they, above all other factors, determine the poise of the flyer and his ability to attain equilibrium and to adjust his balance promptly in the midst of an ever-changing environment.

The action of man is guided in a twofold manner by the senses. They bring directly to the consciousness certain impressions which determine the response, and they also serve to initiate numerous reflexes without any conscious appreciation on the part of the subject. It is precisely these unconscious or subconscious responses to sensory impressions that modify or control most of the familiar movements such as walking, running, jumping and diverse other performances of skill and dispatch. Four sense organs in particular are here concerned: the skin sense, the muscle sense, vision, and the equilibrating apparatus in the labyrinth of the ear. In the case of all these the normal stimuli to which they are accustomed and the outcome of a response to their sensory impressions must be decidedly distorted when one floats in the air instead of feeling the customary firm contact with the earth. For the aviator it may become necessary to unlearn, as it were, some of the customary responses to which he has been adapted. His neuromuscular mechanism, trained from youth to react to changes in position by definite muscular movements, too rapidly at times to rise above the threshold of consciousness, may lead him into trouble when he is guiding his aerial flight through a rapidly changing series of positions, unless he can react to the novel conditions of equilibrium that confront him quickly and by new reflexes. It is no far-fetched notion to believe that a careful study of the physiology of the special senses may be of distinct advantage in furnishing ideas for the construction and piloting of the aeroplane.

Every one appreciates how the unexpected sight of something horrible may alter the posture of the body, how the body is automatically arched backward when some obstruction suddenly presents itself to view. These natural movements to avoid a collision may lead to dangerous situations if they are unconsciously executed by an aviator whose hand happens to be guiding the mechanism of a flying machine. The protection of the eyes against dust and other foreign bodies is particularly important because they enable one to avoid precisely such undesirable and unconsciously executed reflex movements to which we are accustomed under ordinary circumstances. Persons whose peripheral sense organ in the semicircular canals of the ears fails to function normally are not well adapted to the pursuit of aviation. These instances must suffice to indicate the close interrelation of the senses to successful aerial performances.

Another feature of existence at high altitudes, applying more especially to balloon ascensions, is the impairment of the respiratory function with increasing rarefaction of the atmosphere. The limits compatible with life under ordinary conditions have already been exceeded in a number of experiences, notably that of Tissandier and his colleagues, who reached a height of 8,600 meters (over 5 miles) with two fatalities in 1871. The consensus of opinion at present ascribes the untoward results to the deficiency in oxygen which is experienced at great altitudes, without minimizing other contributory factors. The situation differs from mountain-climbing, in which the *mal de montagne* is aggravated by the vigorous muscular exertion ordinarily demanded by the ascents; whereas in the balloon the effort in this form is inconsiderable. It is commonly admitted that the malaise felt at considerable heights — the dizziness, confusion of the senses, and fatigue — disappears if oxygen is inhaled. At altitudes of from 4,000 to 8,000 meters (from about 2½ to nearly 5 miles) no special precautions are necessary so long as the partial pressure of the oxygen in the lungs is raised. At higher levels special devices are called for to insure adequate oxygenation.

The Aero Club of France, on advice of its commission on physiologic ascensions, has placed the limits of the danger zone below 5,000 meters[2] (about 3 miles). Professor Zuntz has calculated the limits of physiologic safety, in ascensions in which the details of the oxygen-supply and respiration apparatus are carefully guaranteed, at about 12,000 meters (7½ miles). It is possible to devise schemes which might permit of adequate respiratory function at greater altitudes. The probable need of such outfits is now diminished by the success which has attended the use of unmanned balloons equipped with self-registering meteorologic apparatus for the exploration of the upper air. This has practically eliminated the necessity of endangering human life for the solution of the atmospheric problems involved. Even at much lower altitudes, however, certain risks associated in good part with the diminished oxygen pressure may confront the aviator. It is not enough that his psychic faculties and speedy judgment should be constantly requisitioned. Flying at frequently and rapidly changing altitudes, and caught in air-currents that alter his ease of respiration, he is liable to the undesired onset of nausea, dizziness and faintness at

1. Zuntz, N.: Zur Physiologie und Hygiene der Luftfahrt, Luftfahrt und Wissenschaft, Part 3, edited by J. Sticker, Berlin. J. Springer, 1912.

2. Paris Letter, THE JOURNAL A. M. A., Nov. 18, 1911, p. 1708.

most critical moments. Such symptoms speedily disappear when the oxygen content of the blood is voluntarily restored by a few deep breaths. The danger of the onset of such abnormal crises of oxygen deficiency in the central nervous system is further enhanced by the fact that the aviator may have his attention suddenly diverted to the mechanism under his control. For a moment he neglects or inhibits the essential respiratory acts with consequences that may become exemplified in confused management of the machine and death by accident as a final outcome.

New industries and new occupations have their characteristic diseases. The characteristic malady—*mal des aviateurs*[3]—to which the newest performances of aviation subject its devotees emphasizes unexpected vasomotor disturbances which have already been discussed in these columns. The conquest of the air has brought into existence problems that border on the field of the physiologist and physician as well as on the domain of engineering.

PHYLACOGENS—A WARNING AND A PROTEST

As the manufacturers of the so-called Phylacogens appear determined to spare no effort to stampede physicians into making free and confident use of these peculiar products in the treatment of all kinds of infections, the occasion is an appropriate one for the brief discussion of some questions in regard to Phylacogens and the Phylacogen propaganda[1] that should receive careful consideration.

It is stated in the Phylacogen literature that the Phylacogens are neither bacterial vaccines nor serums as ordinarily understood, but sterile aqueous solutions of metabolic substances or derivatives of bacteria grown on artificial mediums. In view of the variability in the growth and activity of different strains of the same bacterium, and of the same strain at different times, constant and accurate dosage is not possible. This is an important consideration because the Phylacogens are primarily toxic, sometimes sufficiently so to produce even highly alarming reactions. In their circular concerning the Pneumonia Phylacogen, Parke, Davis and Company make the following statement (page 15): "A patient will never seriously object to the pain of the local reaction following subcutaneous administration, nor to the chill and other symptoms following the intravenous injection *if he has been properly prepared* for the results that are expected to follow the injections. Having consented to the treatment, the patient should never be informed as to the reaction *until the remedy actually has been administered;* he should *then* be told what to expect, an intelligent explanation should be made and his logical sense appealed to by showing him that the local reaction, the chill, etc., produce but temporary discomfort and should be entirely disregarded in view of the end to be attained — the cure of the patient's disability." (The italics are in the circular.) This is a peculiar "preparation" of the patient, to say the least, but the statement is quoted here primarily to emphasize that the Phylacogens have serious toxic possibilities that cannot be accurately estimated beforehand. This being the case, there is no escape from the further possibility that such toxic effects at times may turn the scales against the patient, who, if the victim of pneumonia or other acute infection, already is struggling against a full measure of bacterial intoxication. The manufacturer, however, has no scruples on this account except that the patient should never be informed as to the reaction which will follow the administration of the Phylacogen *until the remedy actually has been administered.*

If we ask ourselves the question what evidence there is to show that the Phylacogens actually have the remarkable therapeutic virtues ascribed to them by their manufacturer, we find that there are no experimental observations whatsoever bearing on the question. Apparently no one has made any experiments on animals to learn whether these identical mixtures can prevent infections or influence experimentally produced infections. The claims rest solely on the results of clinical observations and when the records of such observations are examined we find that no definite conclusions are permissible because the observations lack reliable and adequate control. Thorough studies have not been made according to the statistical method whereby unbiased deductions are drawn from comparable series of cases treated in different ways. Physicians need not be told that the diseases under consideration are in large measure spontaneously curable diseases, at least so far as the acute diseases are concerned, and that all the chronic processes in question are subject to spontaneous variations in their manifestations, to remissions and intermissions.

In judging the effects of special methods of treatment of such diseases the physician must ever be on guard against the antique *post hoc ergo propter hoc* blunder, the overworked servant of the enterprising manufacturer and eager promoter of therapeutic fads. The circumstance that the manufacturer has been able to accumulate from different parts of the country under diverse conditions records of cases of pneumonia, for instance, treated with Phylacogen which after pruning at his hands yield a low death-rate, is of no significance whatever because there is no proper standard for comparison.

Much more might be said about the Phylacogens; they may come up for discussion again. Let us not forget, in any event, that they have toxic properties and that the claims for their therapeutic powers are much more extensive than the facts which are at present available would warrant.

3. Mal des Aviateurs (Aviators' Disease), THE JOURNAL A. M. A., Nov. 18, 1911, p. 1618; also Paris Letter, May 27, 1911, p. 1587.

1. See page 384, the Propaganda for Reform Department, this issue.

Current Comment

THE FETAL FLUIDS

The origin of the fetal fluids has been the subject of more or less debate. Three views have been advanced to explain the composition and source of these liquids: (1) that they are transudates from the maternal blood and tissues; (2) that they are products of the fetus alone; (3) a compromise theory which ascribes their formation to both maternal and fetal factors. Owing to certain structural relationships the fetal fluids of the allantoic and amniotic sacs are generally considered as mainly fetal urine. The allantoic sac develops as a part of the urinary bladder, while the urethra of the fetus early opens into the amniotic sac. In fact, Lindsay[1] has undertaken a chemical examination of the fetal fluids in the hope that it may help to reveal any characteristic differences that may exist between adult and fetal protein metabolism. The analogy of the importance of urine analysis for an appropriate understanding of the metabolism in adult organisms is apparent. The fetal fluids were shown by Lindsay to contain the ordinary urinary constituents of adult urine of the same species — urea, allantoin, amino-acids, creatin, creatinin, and other unidentified nitrogenous compounds. From alterations in the relative proportions of some of these components it was concluded that the fetal metabolism differs from that of the adult in the less complete catabolism of protein and the greater activity of nuclear metabolism. Wohlgemuth and Massone[2] have furnished evidence for the theory that substances present in the maternal blood can be transported directly into the amniotic fluid without having traversed the fetal circulation. They induced a marked increase in the content of the amylolytic enzymes in the maternal blood by ligating the maternal pancreatic ducts, and showed a corresponding increase in the fetal fluid, independent of the fetus itself. Such facts indicate the possibility of a direct participation of the maternal blood in the make-up of the amniotic fluid, and support the view of a twofold origin of the constituents of the fetal fluids.

1. Lindsay, Dorothy E.: A Contribution to the Study of the Protein Metabolism of the Fetus, Biochem. Jour., 1911, vi, 79.
2. Wohlgemuth, J., and Massone, M.: Experimentelle Beiträge zur Frage von der Herkunft des Fruchtwassers, Arch. f. Gynäk., xciv, No. 2.

BOTANY AND MEDICINE

Many persons now living can recall the time when it was not uncommon for persons holding a degree in medicine to have a comprehensive familiarity with plant forms that is unheard of to-day. Fifty years ago medicine was frequently the gate through which men passed in order to enter the field of botany. Nowadays the botanist is developed through the biologic curriculum and evolves independently of the applied sciences, as do the devotees of other disciplines, such as mathematics, astronomy or chemistry. It is a common belief, the complete justification for which we are unable to offer, that the cause of the intimate relationship between the old botany and medicine lay in the early importance which plants assumed in the practice of the physician. Household remedies and therapeutic agents were derived from vegetable forms, through the necessary acquaintance with which an interest in the species of plants and in botanical relationships was developed in many persons with keen powers of observation and an underlying scientific instinct. In this way a botanist was frequently the unexpected resultant of an earlier career in medicine. Another point of view is presented by Professor Farlow[1] of Harvard University, a distinguished botanist who has lived through the transition period when the old botany was changed into the new. "When I graduated from college in 1866," writes Dr. Farlow, "and wished to become a botanist, Professor Gray told me that I ought to study medicine first because the possibility of gaining a living by botany was so small that one should always have a regular profession to fall back on. Some years later De Bary told me that when he was a young man there was a similar state of things in Germany and, although desiring to devote himself to botany, he had to study medicine." Botany and medicine have become more and more divorced from each other except to the extent that bacteriology and plant microbiology are concerned in relation to disease and that a knowledge of biologic subjects in general forms the fitting preparation for the study of the medical sciences. One would scarcely expect in the coming generation to see the pecuniary rewards of a profession that has for its prime object the service it can render to humanity serve as a means to support interest in another science. Each field of endeavor has long since earned the right and privilege of independent careers devoted to it.

1. Farlow, W. G.: The Change from the Old to the New Botany in the United States, Science, Jan. 17, 1913, p. 79.

STANDARD METHODS OF WATER ANALYSIS

In 1905, the Committee on Standard Methods of Water Analysis of the American Public Health Association submitted a report[2] which has for about six years served as the standard authority in this country for workers on the bacteriology of water and sewage. In this report, it is recommended that the standard culture medium used for obtaining the colony count shall be nutrient gelatin and that a fixed incubation period of forty-eight hours at a temperature of 20 C. (68 F.) shall be employed. At the time this report was published the need for a uniform method which should afford a basis for comparison was strongly felt, and a large part of the work done in water-purification plants and in the general examination of water for sanitary purposes has conformed to this standard since the report was issued. A second report of the committee (different in personnel from the original committee) has just been published.[3] This report embodies a radical change from the standard originally adopted. The standard culture medium recommended is now agar instead of gelatin, with an incubation period of twenty-four hours at 37 C. (98.6 F.). The change has encountered much opposition among bacteriologists, and the laboratory section of the American Public Health Association has passed a resolution recommending parallel

2. Supplement No. 1, Jour. Infect. Dis., 1905, p. 1.
3. Amer. Pub. Health Assn., N. Y., 1912, p. 1.

determinations at 20 C. wherever the new standard is adopted. It seems to us unfortunate that the new standard should have been promulgated, since it can serve only to introduce confusion into a field where procedure was becoming fairly well systematized. An abrupt change from 20° C. counts to 37° C. would of course make earlier records useless for comparison. It is evident, too, that the use of the higher temperature would often fail to give any growth with well-handled filter effluents and would unquestionably fail to show small differences in the operation of filter-plants which might prove significant to the operator. In any event, an extended comparison of the 20° and 37° counts in bacteriologic examinations of water, sewage, milk and the like seems to be needed before any radical change is put into effect. The prominence given in this report to the use of bile mediums and to the differentiation of varieties of *Bacillus coli* based on fermentative power may also seem to some workers unwise. Recent work indicates that the fermentative properties of members of the *B. coli* group are more variable, or at least less stable, than is sometimes supposed. In view of the prevailing opinions regarding the second report, we trust that a revision will be speedily effected and that a third report embodying more completely the current practice among laboratory workers will be issued before the present report has brought about too much confusion.

IS FRIEDMANN'S ALLEGED CURE A COMMERCIAL OR A SCIENTIFIC PROPOSITION?

A few days ago the newspapers announced that a New York banker had offered Dr. Friedmann a million dollars for his cure, if such it should prove to be on investigation. The latest announcements are to the effect that Dr. Friedmann accordingly has started for this country. If this is true, it seems to justify our suggestion of December 14, to the effect that Dr. Friedmann appeared to possess more commercialism than scientific spirit. Otherwise, why should he come to this country to put his treatment to a test? Is it because there are not enough consumptives in Germany? Or is it for the million dollars? On his arrival in the United States his work will doubtless be handled by the papers even more sensationally than hitherto. Apparently his treatment has not stood the investigation of his scientific confrères on the other side. Will it on this?

"THE MOVING FINGER WRITES"

The semi-nationalization of the medical profession in Great Britain, through the passage of the national health insurance act, and the antagonism that developed between the government (administration) and physicians as to ways and means, have resulted in turning the strong light of publicity on the medical profession. Every position taken by the medical profession that was either weak or indefensible has been thoroughly exposed. In Great Britain, as in the United States, the vulnerable point of attack was that dealing with the relation of physicians to the proprietary evil. That the public recognizes the weakness of the profession's position in this matter can be demonstrated in no better way than by quoting from one of several articles that have appeared in London *Truth* — a paper, by the way, that has for years fought quackery and the "patent-medicine" evil:

> It will be remembered that every bottle of medicine and every box of pills will be supplied from a prescription. Those prescriptions will be retained by the chemists who dispense them and handed over to the insurance committees as vouchers for the payment for the medicines dispensed. Here will be in the course of a very few years a mine of valuable statistical material, which will throw light, not only on the extent of medical knowledge in the use of drugs, but on the value of drugs themselves. The protests which have been raised in various quarters during the last day or two in reference to the handing over of the prescriptions to the committee would seem to show that the medical profession is alive to the danger which threatens it.

Probably the time is distant when the American medical profession will be required to make what amounts to a public record of the prescriptions it writes, though some day, doubtless, it will come. But it is not necessary to look with apprehension on the future, for the present has problems enough. The American public has already awakened to the fact that the prescribing of fraudulent or unscientific proprietary mixtures by physicians is an evil but one degree removed from that of self-dosing with "patent medicines." The sooner the medical profession realizes this, the better it will be for its own dignity and scientific standing.

Medical News

CALIFORNIA

Physicians' Office Building.—The *Bulletin* of the Los Angeles County Medical Association for January 16, publishes a floor plan of the Los Angeles County Medical Building, showing the conveniences provided for physicians in the building.

Banquet to Dr. Smith.—Dr. Everett R. Smith, Los Angeles, for fifteen years vice-president of the California Hospital, was the guest of honor at a banquet given to eighty-six physicians in Los Angeles, recently. Dr. H. Bert Ellis was chairman and Dr. Norman Bridge, toastmaster.

San Diego Exposition Hospital.—The field hospital on the grounds of the Panama-California Exposition, San Diego, has been opened for service, anticipating the inevitable accidents incidental to extensive building operations. During the construction period the institution will be available in case of sickness or accident for every exposition employee and during the exposition year, 1915, all emergency cases arising on the grounds will be cared for at the hospital. The building is of mission type and of concrete construction, and although it is officially an emergency institution, its equipment is complete and modern. The hospital is in charge of Dr. C. L. Caven.

Personal.—Dr. Charles L. Tisdale, Alameda, secretary of the State Board of Medical Examiners, has resigned.——Dr. Myra Knox, Oakland, has been elected physician to the California Home for the Adult Blind, Oakland, vice Dr. Hubert L. Rowell, Berkeley, resigned.——Dr. M. H. Smythe has succeeded Dr. A. W. Hoisholt, resigned, as second assistant superintendent of the State Hospital, Stockton.——Dr. A. W. Hoisholt has been elected medical superintendent of Napa State Hospital, vice Dr. A. E. Osborne, resigned.——Dr. E. N. Ewer, president of the Board of Health of Oakland, has returned from Europe.——Dr. C. G. Stivers, Los Angeles, has returned after two months postgraduate study in the East.——Dr. Thomas L. McGee, San Diego, laid the cornerstone of the First Baptist Church in that city, recently. Twenty-five years before, he laid the cornerstone of the former building of the same church.

ILLINOIS

County to Erect Sanatorium.—La Salle County has arranged for the erection of a temporary sanatorium for the treatment

of tuberculosis with a capacity of from twelve to fifteen beds on the county farm, at a cost not to exceed $2,000.

New Hospital.—A hospital with accommodations for sixty patients and to cost $75,000 is to be erected next summer in Peru.——St. Mary's Hospital, La Salle, which has seventy-five beds and is under the management of the Franciscan Sisters, is to be enlarged to a capacity of 105 beds, at a cost of $35,000.

Personal.—Dr. R. A. Mathew, Morrison, was seriously injured January 4, by the overturning of his automobile, while making a professional call in Morrison.——Dr. Whedon W. Mercer, Lincoln, a member of the staff of the Lincoln State School and Colony, passed the assistant superintendent's examination, recently.——Dr. F. M. Agnew, physician and clergyman of Makanda, celebrated his golden wedding anniversary, January 18.——Dr. Frances Chapman has been appointed matron of the Police Department of Oak Park.——Dr. T. D. Doan, Scottville, has gone to Colorado where he will enter a fraternal sanatorium at Colorado Springs.——Dr. H. F. Ballard, Chenoa, is reported to be seriously ill with gall-stones.——Dr. R. G. Savage, Oak Park, caught his right arm in the machinery of his automobile, recently, sustaining severe injuries which it is feared will result in permanent deformity.

Chicago

Weir Mitchell Before Physicians' Club.—Dr. S. Weir Mitchell, Philadelphia, will deliver an address on "The Profession of Medicine in the War of the Rebellion," before the Physicians' Club of Chicago, February 25.

Gives Emergency Appropriation for Contagious Diseases.—The city council has agreed to appropriate $10,000 to meet the present emergency existing on account of the large number of contagious diseases.

Grand Jury Recommends Contagious Disease Hospital.—The grand jury, in its final return to Judge Burke, recommended the appropriation of $2,000,000 for the building and equipment of a contagious disease hospital, sufficient to care for at least 1,500 patients.

Personal.—Drs. S. A. Waterman and W. F. Haley recently sustained Colles' fractures of the right arm while cranking their automobiles.——Dr. and Mrs. Grambow Thomsen-von Colditz have returned from Europe.——Dr. and Mrs. Gaetano Ronga were cut and bruised in a collision between their automobile and a wagon, January 24.——Dr. George B. Young has been elected treasurer of the Chicago Public Service League.

LOUISIANA

Health Day.—January 17 was observed as health day by all the public schools throughout the state with proper exercises.

Ward for Incurables.—A ward for incurable men is to be established in a few weeks in the New Orleans Home for Incurables.

New Officers.—Orleans Parish Medical Society: president, Dr. Homer DuPuy; secretary, Dr. W. D. Phillips, both of New Orleans.——Shreveport Medical Society: president, Dr. T. P. Lloyd; secretary, Dr. C. P. Munday.

To Enforce Antispitting Ordinance.—Dr. Oscar Dowling, president of the State Board of Health, announces that after March 1 every violation of the antispitting ordinance will be followed by arrest on the charge of violation of the sanitary code. For this offense the minimum fine is $10 and costs, or about $20.

Board of Health Work to be Reorganized.—Dr. William T. O'Reilly, city health officer of New Orleans, suggests reorganization of the work of the Board of Health, making several independent branches and fixing more definitely the responsibility. His plan is to divide the work into five departments, namely: medical inspection, food inspection, sanitation, vital statistics and laboratories.

Hotel Dieu to Have New Building.—Bids were opened January 3 for two new buildings at the Hotel Dieu. The plans contemplate the razing of the present main building and the erection of a new building at a cost of $250,000 or more. One of the first buildings to be erected is a memorial to J. M. Burguieres, who left $50,000 as an endowment for a Catholic Home for Incurables. As this sum was insufficient, the heirs transferred the endowment to the Hotel Dieu.

State Board Election.—At the annual meeting of the Louisiana State Board of Health in New Orleans, December 17, the following officers were elected: president, Dr. Oscar Dowling, Shreveport; vice-president, Dr. A. H. Gladden, Monroe; secretary, Dr. W. M. Perkins, New Orleans; bacteriologists, Dr. W. H. Seeman and S. D. Porter, director, New Orleans; Drs. Thomas E. Wright, New Orleans; George B. Adams, Pineville; J. D. Baucum, Haynesville, and G. C. McKinney, Doyle, inspectors of the hookworm commission.

Personal.—The police jury for Jefferson Davis County has elected Dr. J. H. Cooper president and Dr. R. R. Arceneaux secretary of the Board of Health, both of Welsh.——An incendiary fire in the office of Dr. J. C. Denman, Franklinton, December 21, caused a damage of about $200.——Dr. J. M. Bodenheimer, Shreveport, has been placed in charge of the branch bacteriologic department of the State Board of Health.——Dr. A. B. Brown, New Orleans, secretary of the State Board of Medical Examiners, is reported to be seriously ill at the Charity Hospital.——Dr. G. C. McKinney, Doyle, has been appointed a member of the State Board of Health.

Win Fight for Recognition.—The local medical men of New Orleans have won their fight for recognition by the board of administrators of the Charity Hospital. The new board received a conference committee consisting of Drs. Rudolph Matas, Isadore Dyer, I. I. Lemann, Herman B. Gessner, M. Feingold and C. J. Miller. After the arguments of the conference committee had been received and elaborated by Dr. Lemann, who presented the report, the board voted unanimously to secure the services of a specialist in hospital management who should visit the hospital, familiarize himself with local conditions of the present system and administration and then give an opinion and report, suggesting such changes in this regard as he might deem necessary or advisable.

MARYLAND

Diphtheria Closes Schools.—Dr. Thomas J. Conrey, secretary of the Cecil County Board of Health, closed the Chesapeake city public school, January 21, on account of the prevalence of diphtheria.

After-Care of Insane.—A committee headed by Dr. Adolf Meyer, Baltimore, has been appointed by the Maryland Psychiatric Society to find out to what extent it will be feasible to remove patients from the state hospitals for the insane in homes where they can be made self-supporting. The findings of the committee will be embodied in a bill to be presented at the next legislature. The plan is to put in the hands of the State Lunacy Commission the power to remove patients from the hospitals and place them under the supervision of homes which the commission will provide. The inspection will be made by Drs. William B. Cornell and A. P. Herring of the State Lunacy Commission.

Baltimore

Hall in Baltimore.—Dr. Winfield Scott Hall of Northwestern University, Chicago, during the week of February 3 will make seventy speeches on the social evil, under the auspices of the Society for the Suppression of Vice. He will speak in shops, factories, stores, etc.

Personal.—Dr. D. F. Onnen has gone to Florida for the winter.——Dr. F. H. Vinup has been commissioned assistant surgeon M. C., N. G. Md., and assigned to the Fourth Infantry.——Dr. Ira Remsen, president of Johns Hopkins University, who was operated on recently in Johns Hopkins Hospital, has recovered and returned home.

MASSACHUSETTS

Personal.—Dr. Timothy Leary, Boston, has been appointed pathologist to Carney Hospital.——Dr. Oscar Richardson, Boston, has been appointed associate medical examiner for Suffolk County; Dr. William C. Mackie, associate medical examiner for Norfolk County, and Dr. John E. McGrath, associate medical examiner for Middlesex County.——Dr. and Mrs. James R. Fuller, Andover, have sailed for the Mediterranean.

State House Topics.—The Boston State Hospital for Insane reports an increase in number of patients from 767 in 1911 to 1,195, and asks an appropriation of $400,000 for this year. The Danvers State Hospital asks for $359,600; Foxboro State Hospital for $103,500; the Gardner State Colony for $143,500, and the Lakeville State Sanatorium for $87,300.——The Board of Registration in Dentistry opposes the proposed law authorizing dental nurses, on the ground that such a law would subject the public to cheap, unskilful workmanship and quackery.

Medical College News.—A new department for the study of tropical diseases has been established at Harvard Medical School. It will have at its head Dr. Richard Pearson Strong, with whom will cooperate Drs. Theobald Smith, H. C. Ernst, W. T. Councilman, E. E. Tyzzer, S. B. Wolbach and M. J.

Rosenau.——The following changes have been made in the faculty of Tufts College Medical School: Dr. Morton Prince has been appointed emeritus professor of neurology; Dr. George H. Washburn, emeritus professor of obstetrics; Dr. John Jenks Thomas, professor of neurology; Dr. Alfred William Balch, professor of chemical pathology and toxicology; Dr. Stephen Pushmore, associate professor of gynecology; Dr. Leo V. Freidman, assistant professor of obstetrics, and Dr. Elmer W. Baron, assistant professor of diseases of children.

MICHIGAN

State Board Asks More Money.—The State Board of Health has decided to ask the legislature for an appropriation of $25,000. The appropriation for several years past has been only $9,000 a year.

Hospital License Revoked.—The Detroit Board of Health on December 18 is reported to have revoked the license of Mercy Hospital, a maternity institution of Detroit, on account of illegal traffic in babies born in the institution.

State Society Meeting.—At a meeting of the council of the Michigan State Medical Society in Detroit, January 15, it was decided that the annual meeting of the society should be held in Flint, September 4-5. Dr. Frederick C. Warnshuis, Grand Rapids, was elected secretary of the society and editor of its official journal, and Dr. D. Emmett Welsh, Grand Rapids, was elected treasurer.

Tuberculosis Notes.—The supervisors of Kalamazoo County have appropriated $10,000 as the share of the county toward the maintenance of the tuberculosis hospital. The city of Kalamazoo has given $35,000 for this purpose. A site has been secured and a hospital will be opened early in the spring.——A movement has been started to secure a tuberculosis sanatorium in the Upper Peninsula, similar to that at Howell, but admitting patients regardless of the stage which the disease has reached.

Sanitary Experts Wanted.—At the January meeting of the State Board of Health, Secretary Dixon announced that the legislature would be asked for an appropriation of $50,000 for the maintenance of ten district health officers to act under the supervision of the State Board of Health to be located in different parts of the state, whose duty it should be to make a general sanitary survey of the state and report the sanitary conditions and keep records of all feeble-minded persons. The board also approved with modifications the Glasner pure health marriage bill and the O'Dell bill providing for sterilization of certain feeble-minded persons.

Length of Medical Course.—A controversy between the literary and medical departments of the University of Michigan as to the length of the combined medical and literary course has been submitted to the Board of Regents for decision. The opinion of the medical department is that the combined course should be optional but that the six years course should be retained as a minimum. The matter is to be decided by arbitration by a board composed of Regents Sawyer and Bell, President Hutchins, and Deans Effinger of the literary department, Colley of the engineering department, and Victor C. Vaughan of the medical department.

Personal.—Dr. and Mrs. David C. Pierpont, Ironwood, sailed for the Mediterranean, January 18.——Dr. John T. Watkins, Detroit, was seriously injured in a collision between his automobile and a street car, January 16.——Dr. Andrew C. Roche, Kearsarge, has been appointed a member of the State Board of Pardons to succeed Dr. J. B. Bradley, Eaton Rapids.——Dr. Charles Bell, Detroit, recently appointed medical examiner of aliens at Port Huron, has resigned.——Dr. Charles W. Thompson of the Newberry State Hospital has been appointed a member of the medical staff of the Woodcroft Sanatorium, Pueblo.——Dr. J. V. Frazier, Lapeer, is about to locate in Port Huron.——Dr. Bernhardt Jacob, for seventeen years physician of the Detroit House of Correction, has been appointed assistant superintendent of the institution.

MONTANA

Crusade Against Unlicensed Practitioners.—A state-wide crusade to drive from Montana unlicensed medical practitioners was launched Dec. 12, 1912, by Dr. Donald Campbell, acting chairman of the Silverbow County Medical Society, Butte.

State Sanatorium Opened.—The Montana State Tuberculosis Sanatorium, situated at Galen, 3 miles from Warm Springs, is now ready to receive patients. The institution at present consists of a main building and six cottages, and will accommodate about 100 patients.

New Officers.—Silverbow County Medical Association at Butte, January 15: president, Dr. A. E. Anderson; secretary, Dr. Alfred Karsted, both of Butte.——Missoula County Medical Society, including physicians of Ravalli and Saunders counties, at Missoula, December 28: president, Dr. H. B. Farnsworth; secretary-treasurer, Dr. C. L. Bourdeau, both of Missoula.

Personal.—Dr. W. A. Deal, Lewistown, has been appointed health officer of Fergus County, vice Dr. Willard A. Long, resigned.——Dr. George W. Clay, Malta, has taken his seat in the Montana legislature from Valley County.——Dr. P. H. McCarthy has succeeded Dr. J. B. Sullivan, both of Butte, as secretary of the Deerlodge County Board of Health.——Dr. J. H. Erwin, Great Falls, has succeeded Dr. C. E. K. Vidal, Great Falls, as coroner of Cascade County.——Dr. W. S. Cogswell, Livingston, has been elected secretary of the State Board of Health, vice Dr. T. D. Tuttle, Helena, resigned to accept the presidency of the State Tuberculosis Sanatorium, Warm Springs.——Dr. Max Barbour, Helena, has been reappointed physician of Lewis and Clark County.

NEW YORK

Medical Department of State Library Opened.—The medical department of the State Library, Albany, containing about 12,000 volumes and 600 periodicals, was opened January 15. It is open from 9 a. m. to 6 p. m. on all days except Tuesdays and Thursdays, when the hours are from 9 a. m. to 10 p. m.

Milk Conference of Seven States.—A conference for the purpose of discussing the milk problem from the standpoint of purity is to be held in New York City early in February in which representatives of neighboring states will participate. Governor Sulzer has appointed Harry B. Winters of Tioga, Dr. Julius Broder of New York, and Albert Manning of Otisville to represent New York state.

Mortality Statistics for 1912.—The death rate of New York State for 1912 was 14.6, per 1,000, the lowest in its history. The figures show 5,000 fewer deaths than in 1911. The death rate from typhoid is the lowest on record, 52 per cent. lower than the average rate prior to the year 1905. There were 600 fewer deaths from tuberculosis than in 1911, and a smaller number of deaths than in any of the eight preceding years. A new record was also made for diphtheria, there being 250 fewer deaths from this disease than in 1911. It is believed that this is due to the more general use of the antitoxin furnished by the state. The cancer death rate increased. The urban mortality from tuberculosis was 15.2 and the rural mortality from tuberculosis was 11.3 per 100,000 population. Infantile paralysis caused nearly 200 deaths during the year.

Personal.—Dr. A. M. Loewenstein, Rochester, has been designated to superintend the establishment of a dispensary in Rochester under the auspices of the Hebrew Charities Society.——Drs. R. H. Ward, H. C. Gordinier, D. W. Houston and William Kirk, Jr., have been elected governors of the Marshall Sanitarium, Troy.——Dr. Willis E. Ford has been appointed chief of staff of St. Luke's Hospital, Utica. Dr. Ford was the guest of honor at a complimentary dinner given by the staff, January 21, in commemoration of his thirty years of service as medical director and in honor of his new appointment as chief of staff.——Dr. George W. Miles, Oneida, has been appointed coroner of Madison County, vice Dr. E. P. Bailey, deceased.——Dr. James D. V. Sheehan, Syracuse, has been elected supreme medical examiner of the Catholic Relief Beneficiary Association.

Work of the Special Public Health Commission.—The first meeting of this commission was held in the United Charities Building, on January 20, and other meetings have succeeded this one during the week. Many health officers throughout the state have been called to testify in regard to the working of the present health laws. The evidence brought out seems to show that there are many shortcomings in the law, and that everybody connected with the administration of health laws should be getting more money. Prof. C. A. E. Winslow of the department of biology of the College of the City of New York thought the law which requires a local health officer to be a physician was a poor one. He also thought the health unit should be larger than the town and that there should be some way of bringing the knowledge of the State Board to the county. Dr. Charles F. Bolduan of the New York Health Department suggested retaining the town and village health officers, but subordinating them to a county officer who should be a trained expert. All agree that constructive legislation is needed at once. It was also brought out that conditions in the labor camps, especially those under charge of state contractors, were intolerable, and that the Indian reservations needed

health supervision. Dr. A. C. Hill, who had made a study of conditions in these reservations, testified that one in every three of the Indians has tuberculosis as the result of living in overheated shanties and the habit of spitting on the floor. There was a difference of opinion among the members of the commission as to the desirability of placing the port health office under Federal control. It was argued that this step would save the state about $2,000,000 during the coming year. Commissioners Delaney and Linn favor a provision which will permit the health office to increase the fees charged for examination and fumigation of vessels so as to cover the needs of the office.

New York City

New Hospital Dedicated.—The new building of the Lutheran Hospital, which was recently erected in East New York at a cost of $20,000, was dedicated, January 19.

American Museum of Safety.—At the annual meeting of this society, January 23, it was announced that Mrs. Mary W. Harriman had established the E. H. Harriman gold medal to be awarded annually to the American steam railway making the best record in accident prevention and industrial hygiene. The Dr. Louis Livingston Seaman gold medal for progress and achievement in hygiene and sanitation and the mitigation of occupational diseases was presented to the National Cash Register Company. The Rathenau gold medal was awarded to Thomas A. Edison for having invented the best device in the electric industry for safeguarding industrial life and health. This device is a storage battery light which may be carried by miners without any risk and from which no fire or explosion may be started.

To Study Venereal Diseases.—The Department of Health has sent circulars to physicians in this city announcing that it has undertaken an extensive study of venereal diseases and is desirous of obtaining as full information as possible as to the prevalence of these diseases. Public institutions have been required to report these diseases since May 1, 1912, and all physicians were requested to furnish similar information concerning their private patients but no attempt was made at that time to reach every physician in the city. Cards have been sent to each physician, which are to be filled out and returned, showing the number of cases of syphilis, chancroid, and gonorrhea he has seen during the year 1912. Physicians are requested to report all cases coming under their observation in the future, omitting the name and address, but giving other data in connection with the case. A supply of report cards to be used for this purpose will be forwarded to any physician on request. All information is to be regarded as confidential and will not be accessible to the public nor are the records deemed public records. The Department of Health makes the Wassermann test and a bacteriologic examination of discharges without charge. There is also a clinic for the diagnosis of venereal diseases held daily between 9 and 10 a. m. at the central office of the Department of Health.

PENNSYLVANIA

New Officers.—Allegheny County Medical Society at Pittsburgh, January 14: president, Dr. John W. Boyce; secretary, Dr. S. A. Chalfant, both of Pittsburgh.——Luzerne County Medical Society at Williamsport, January 8: president, Dr. E. U. Buckman; secretary-treasurer, Dr. Delbert Barney, both of Wilkes-Barre.

Hospital Notes.—Homewood Hospital, Warren, a sanatorium for tuberculosis with accommodation for thirty patients, located on a hillside north of the city, is nearing completion. ——A hospital has been opened in connection with the International College of Midwifery, Scranton, by Drs. J. Szlupas, J. Kulczycki and P. F. Carlucci.——The directors of the Harrisburg Policlinic have decided to begin the erection of their new hospital on Emerald Street. The building will be under construction early in the spring.

Personal.—Dr. A. J. Miller, Portage, who had a cerebral hemorrhage in December is reported to be convalescent.——Dr. Herman Boyles, New Castle, was painfully injured by the overturning of the ambulance on the front seat of which he was sitting, January 14.——Dr. H. C. Witmeyer, Lebanon, who has been seriously ill, is reported to be improved.——Dr. J. G. Hemington, Uniontown, was held under his overturned automobile for nearly half an hour, January 15, but was not seriously injured.——Dr. S. S. Smith, Lebanon, is reported to be ill at his home.——Dr. G. W. Dreher, Shamokin, who has been ill with rheumatism, has recovered and resumed practice. ——Dr. H. T. Wickert, Emaus, was operated on in St. Luke's Hospital, Allentown, January 13, on account of an infected wound of the hand.——Dr. J. E. Auchmuty, Tamaqua, is reported to be ill with scarlet fever.——Dr. E. L. Kiesel, Scranton, has returned from Europe.——Dr. Frank L. McKee, Wilkes-Barre, was operated on for appendicitis at the City Hospital, recently.

Philadelphia

Site for Nurses' Home.—St. Joseph's Hospital has purchased a three-story house with a chapel in the rear at 1629 Girard Avenue, which will be converted into a nurses' home.

Croasdale Fellowship.—A fellowship is to be established by the Womens' Medical College of Pennsylvania, to be known as the Hannah T. Croasdale Fellowship Fund, in memory of Dr. Hannah T. Croasdale, for thirty years one of the most prominent women physicians of Philadelphia. A committee of which John Stokes Adams, 416 Bullitt Building, is treasurer has been appointed to collect funds for the memorial.

Personal.—Dr. H. R. Owen, chief police surgeon, and Drs. J. J. Williams and Thomas A. O'Brien, members of his staff, have resigned.——Dr. David R. Bowen was operated on in the Pennsylvania Hospital, January 20, for the removal of the appendix, and is making satisfactory progress toward recovery. ——Dr. J. Solis-Cohen is to be the guest of honor at the banquet of the Mount Sinai Hospital Alumni Association to be held in New York City, February 22.——Dr. Guy A. Gerberich, Lebanon, who has been seriously ill with typhoid fever, has recovered and resumed practice.

UTAH

Date of State Meeting Fixed.—It has been decided that the next meeting of the Utah State Medical Association is to be held in Salt Lake City, September 23-24.

Health Department Budget.—Dr. S. G. Paul, health commissioner of Salt Lake City, has asked for an appropriation of $80,988 for the Health Department during the present year. Of this amount, $35,345 is asked for the general health division and $30,793.75 for the collection and disposal of garbage.

New Officers.—Utah County Medical Society at Provo, January 15: president, Dr. H. G. Merrill; secretary-treasurer, Dr. H. S. Pyne, both of Provo.——Salt Lake County Medical Society at Salt Lake City, Dec. 9, 1912: president, Dr. T. C. Gibson; secretary, Dr. R. W. Ashley, both of Salt Lake City.

Personal.—Dr. C. C. Snyder, Salt Lake City, has succeeded Dr. A. N. Hanson as physician of Salt Lake County.——Dr. H. G. Merrill, Provo, underwent an operation for appendicitis at the Provo General Hospital, January 8.——Dr. F. S. Bascom, Salt Lake City, has been appointed assistant chief surgeon of the Denver and Rio Grande System.——Dr. M. R. Stewart has been reelected chief of staff of the Judge Mercy Hospital, Salt Lake City; Dr. H. S. Scott, vice-chairman, and Dr. C. P. Harvielle, secretary-treasurer.

WISCONSIN

Sanatorium Proposition Defeated.—The supervisors of Rock County, on January 16, decided against an appropriation of $20,000 for a county tuberculosis sanatorium by a vote of twenty-six to twelve.

Health Tests.—The Wisconsin State Hygiene Laboratory, Madison, reports that during the last six months of last year, 3,046 examinations were made. Of these, 1,091 were for tuberculosis, 643 for diphtheria, 500 for typhoid and 49 for rabies. In addition, 431 examinations of water and 272 miscellaneous tests were made.

Consolidation of Societies.—At the last meeting of the Wood County Medical Society, action was taken toward consolidation with the Clark Medical Society. In the latter part of January it is said that action will be taken, dissolving both county societies, following which a bi-county society will be formed.

Personal.—Health Commissioner Kraft of Milwaukee has been voted a salary of $5,000, and the fees heretofore claimed by the Health Department have been abolished.——Dr. C. A. Evans has been elected president and Dr. R. F. Teschan secretary of the board of trustees of the Milwaukee Emergency Hospital.——Dr. George W. Moore, Antigo, has been appointed medical examiner of the State Life Fund.

National Druggists' Home.—The National Association of Drug Clerks, supported by the druggists of the United States, has purchased the Palmyra Springs Sanatorium for a national apothecaries' home. The building will be used as a home for old and infirm druggists and as a resort for druggists in the summer time. The Board of Trustees has issued an appeal to the druggists, clerks, manufacturers, employees and traveling

salesmen in the United States that each send a valentine, on February 14, containing $5, to the home in care of the Farmers' Savings Bank, Palmyra.

New Officers.—Milwaukee Medical Society, January 14: president, Dr. Gilbert E. Seaman; secretary, Dr. C. A. Baer.——Waukesha Medical Society has been organized with Dr. B. M. Caples, president, and Dr. Sara Elliott, secretary-treasurer.——Manitowoc County Medical Association: president, Dr. Max Staehle; secretary-treasurer, Dr. W. E. Donohue, both of Manitowoc.——Shawano County Medical Society at Shawano, January 8: president, Dr. William J. Ragan; secretary-treasurer, Dr. Stubenvoll, both of Shawano.——Longlade County Medical Society at Antigo, January 4: president, Dr. G. W. Moore; secretary-treasurer, Dr. J. C. Wright, both of Antigo.

GENERAL

The Infectious Disease Situation.—The presence of the infectious diseases, principally meningitis, small-pox, measles and scarlet fever, throughout a very wide extent of the area of the United States was a notable feature of the medical news during the month of January. Meningitis in a region of the South not heretofore attacked, centering on the states bordering on the Mississippi River, developed the most serious situation. An interesting feature of this epidemic was the attitude of the state health officers as contrasted with that of the citizens or of some of the local health boards in various communities with reference to quarantine. The state health officers practically all condemned the quarantine of one community or state against another, chiefly on account of the difficulty or impossibility of enforcing such quarantine. At the request of the state board of health of Kentucky, the United States Public Health Service sent Dr. R. H. von Ezdorf to cooperate with that state board in protective measures against the epidemic in western Tennessee. His report, dated January 15, states that up to that time 115 cases had occurred in the district investigated by him with fifty-two deaths, and that the epidemic was not abating at that time. He recommended in his report a number of prophylactic regulations which have been found effective in other epidemics, but he also deprecated efforts at quarantine between communities. Small-pox is widely distributed. Philadelphia and Baltimore have had considerable epidemics and public vaccination has been required in the infected neighborhoods, several thousand people having been vaccinated in each place.——Many places have had numerous cases of scarlet fever and also of measles, but in no community has there been a very extensive epidemic, nor has the mortality been excessive. It is probable that the greater attention given to these diseases by the newspapers has given the impression of the existence of severe epidemics in many places.

FOREIGN

Scarlet Fever in Holland.—Pinkhof writes to the *Wiener klinische Rundschau* that a mild form of scarlet fever has been prevailing at Amsterdam for several months. The contagious-disease ward is crowded, but the 200 children do not seem sick, and the aspect of the ward is more like that of a fresh-air camp than a hospital. For weeks the number of cases reported ranged from 150 to 180, and in numbers of other cases the children were not considered sick by their families, or the physician diagnosed the case as "fourth disease." Slight fever, slight sore throat and a little "peeling," that is all, but the entire set of measures organized against scarlet fever were brought into play. The school system is quite disorganized, and yet the total mortality from scarlet fever during the entire year of 1912 is said to have been only eight.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 18, 1913.

The National Insurance Act: The Defeat of the Association's Policy

The failure of the British Medical Association to impose its policy on the government is now obvious, and it is evident that further resistance would be not only useless but injurious to the most loyal supporters of the association. The proper course to take is well indicated in the leading article in the *Lancet* of this week, though the language of the whole article is carefully guarded. While championing the cause of the profession throughout the struggle and pointing out all the defects of the bill, the *Lancet* gave wise counsel of moderation after Mr. Lloyd George made his second offer to the profession of greatly improved terms, and suggested that the terms should be carefully considered before being refused. The agitation against the act in the British Medical Association, however, is almost entirely in the hands of extremists, and political animosity, no doubt largely unconsciously, embitters the struggle. The majority of the profession are conservatives, and therefore opponents of the government, and the unmeasured denunciation of the whole act by the conservative press, much of which it would be mild to describe as misrepresentation, was not without its effect on the profession. During the first part of the struggle, before the chancellor offered much increased remuneration, the profession was united in its struggle against the act, but after that offer the political line of demarcation became evident. The seceders from the Council, described in my previous letter (THE JOURNAL, Jan. 4, 1913, p. 62), were practically all liberals. Similarly in the rank and file of the profession the most bitter denunciation of the act is heard from the conservatives, while liberals admit defects, but can see some good in it.

The leading article in the current issue of the *Lancet* describes the position of the British Medical Association as follows: "A mortifying position has to be faced, and this can only be done with success if bravery is shown. It may require as much courage to change an adopted view as to maintain it, a consideration which has very generally escaped attention. The representative body has now to face actual occurrences, not merely apprehension. To a great extent the position is clear and to many practitioners it is a very unpalatable one, but action, not recrimination, will be expected."

Secret Remedies

The select committee appointed by the government to inquire into the sale and advertisement of "patent" and proprietary medicine, has held another sitting. A director of "Boots Cash Chemists," a company which controls 534 shops, said that he had made an analysis of the sale of the articles described in "Secret Remedies," issued by the British Medical Association. Of 269 articles mentioned, 121 had no sale whatever; 57 had a very poor intermittent sale, being articles which they did not stock, but occasionally obtained to order; 1 required a wine license, and they did not sell it; 12 had a fair sale; 23 had a good sale; 25 had a very good sale and 30 had a very large sale. Out of the 269 articles, therefore, there were only 55 which might be said to have a very good sale. Those articles had in many cases been on sale for many years. The witness thought that there was no objection to putting "poison" on the bottle if the mixture contained an ingredient which was poisonous, but the name of the particular poison should not be published. If the word "morphin" or "opium" and particulars of the quantity were given, it would, he believed, induce those who craved morphin to buy the medicine for the sake of the morphin it contained. People wishing to buy a particular poison would also be able to do so by buying the mixture. On behalf of the retail trade he protested against any publication of formulas, with or without the quantities of the ingredients, because it would be grossly unfair to the trade, without giving any protection to the public. The statement that it is no protection to the public to know that they are taking poisons is too absurd for refutation.

Entomologic Research

The discovery of the rôle played by insects in the propagation of tropical diseases has stimulated entomologic research in this country. Three years ago the government appointed an entomological research committee for the purpose of investigating the insects of the British Colonies. A report on the work performed has been presented to Parliament. Entomologic material is being received in London from fifty collectors in tropical Africa, and about 100,000 specimens have arrived, including many new to science. Mr. Andrew Carnegie has agreed to defray for three years the expenses of three young men to be trained in the United States under Dr. L. O. Howard of Washington, in order that they may eventually carry out entomologic research work in Africa. The committee has funds of $6,500 a year contributed by various colonies, besides $5,000 a year from the imperial government. It now asks to have this income doubled in order to organize a system for the identification of all injurious insects in the British Empire and to publish a monthly periodical dealing with agricultural pests and disease carriers, in addition to compiling a card index for the literature dealing with such pests. Mr. L. Harcourt, secretary for the colonies, in acknowledging the receipt of the report, points out the value to human life which our increased knowledge of insects has brought about. In 1896 the death-rate among European officials in the West

African colonies was 90 per one thousand; in 1911 it was only 14. He attributes no small amount of this remarkable decrease to protective measures against disease-bearing insects.

The Workmen's Compensation Act

By the workmen's compensation act of 1906 the employer was made responsible for any accident to the workman arising in or from his employment. Returns for these accidents during the year 1911 have just been published. The number of persons employed is seven million, of whom five million worked in factories. The industries are divided into seven groups—mines, quarries, railways, factories, harbors and docks, constructional work and shipping. Compensation was paid in 4,021 cases of death and in 419,031 cases of disablement. The average payment in case of death was $770 and in cases of disablement $24. The annual cost of compensation averaged $2 per employee. It was lowest in factories ($1 per person); in railways it was $2; in quarries, $2.50; in shipping, $3.50; in constructional works, $3; in docks, $5, and in mines, $6. In coal-mining the cost was about 2 cents per ton of coal raised. The total compensation paid was $15,000,000, as compared with $13,500,00 in the previous year. These figures include cases of industrial diseases.

The Health of School Children: Large Proportion of Defectives

Only in the last few years has the law required every child attending an elementary school to be medically examined on entering and leaving and, therefore, statistics on the health of school children are only now available. About a million and a half of children are examined annually. The report of Sir George Newman, chief medical officer of the Board of Education for 1911, has just been issued. It shows the condition of 186,652 children in thirteen counties and sixteen urban areas and is far from satisfactory. Only in one urban area did the percentage of "good" nutrition reach 45 and from this figure it ranged down to as low as 3.8. Of 200,000 children examined in London more than half were found to be defective and over 78,000 were recommended for treatment. The malnutrition is due in the great majority of cases to ignorance of the relative value of foodstuffs and the means of using them economically and only in the minority to poverty. About 0.5 per cent. of the children are feeble-minded and of these about one-seventh are of such low grade as to be uneducable.

Research into Mental Disease

A conference of representatives of lunatic asylums and of the Cardiff City Mental Hospital has been held at the Guildhall under the presidency of the Lord Mayor of London to discuss pressing the Government for grants in aid of specific researches into mental diseases. It was pointed out that excellent work had been done in the comparatively few research laboratories attached to asylums. The British system of local government delegates the administration of hospitals for the insane to local bodies, but the work done in these laboratories may be of advantage to the state by tending to reduce insanity. Specific research often demands expenditure beyond what a local body can reasonably be expected to provide. Often it is done by asylum physicians out of their own private resources. In moving the resolution Sir George Savage referred to the advances of public opinion in regard to the treatment of the insane. Now, instead of the first consideration being to protect society from the dangerous lunatic, he said the treatment and, if possible, the cure of the lunatic was regarded as of prime importance. Besides the "dominant" of heredity, there were many cases of insanity depending on bodily and other conditions. Although immediate results might not be obtained from research work, in the long run definite advances must occur. On the question of heredity Dr. James Soutar, president of the Medico-Psychological Association, maintained that its influence had been overrated and that its potency varied enormously in different cases. Examination of family histories over a long period showed that the occurrence of a case of insanity was usually balanced by a large number of competent persons from the same stock.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 10, 1913.

Serotherapy in Small-Pox

At one of the recent meetings of the Académie des Sciences Dr. Pierre Teissier, professor of internal pathology at the Faculté de médecine de Paris, reported the results which he has obtained with the subcutaneous or intravenous injection of serum from convalescent patients in thirteen cases of severe small-pox which he treated in company with M. P.-L. Marie. Five patients died of whom two were infants not vaccinated and three had confluent small-pox treated late. In the eight patients who recovered there was one case of early hemorrhagic small-pox which was very severe, three cases of small-pox with hemorrhagic eruptions, three cases of confluent small-pox, and one patient was an infant not vaccinated. When injected early the serum has a favorable effect on the severity of the disease, but when used late its general action is indifferent. The most striking phenomenon is the improvement in the general symptoms: fall of temperature, increase of urine, lessening of the rapidity of the pulse and increase of arterial tension occurring in from twenty-four to forty-eight hours. In the forms which are hemorrhagic from the beginning or hemorrhagic later and treated early the eruption remains discrete and the lesions dry up in the stage of vesiculation before forming pustules and accordingly without leaving scars. In confluent variola the severity is not noticeably diminished, but suppuration can be eliminated or limited; owing to the active growth of the epidermal cells, the skin heals usually without scars. No symptom occurred which could be traced to the action of the serum.

Bread as a Vehicle for Conveying Diphtheria

At the meeting, January 7, of the Académie de médecine, Dr. René Moreau, health physician at Sens, reported a small epidemic of diphtheria traced to a common source, a baker who transmitted the infection along with his bread sometimes to persons whom he did not see. From March 25 to April 15, 1910, this epidemic attacked eleven persons and caused four deaths. It was not restricted to a single commune but extended to three at a distance of from 4 to 6 kilometers (from 2 2/5 to 3¾ miles) and situated at altitudes from 93 to 231 meters (from 305 to 758 feet). This spread was all the more surprising since diphtheria is not frequent in either of the three communes and has not been mentioned since 1905. Although several bakers furnished bread throughout the affected districts, all the patients without exception were patrons of the same baker, whose wife and son were the first attacked. The woman had contracted diphtheria when on a trip to a district where there were at the time several cases of the disease. It is possible that after the sickness of his wife the baker had not been in direct contact with any of his patrons but, whether this is so or not, Moreau asks whether it was not the bread which he baked that served as a vehicle for germs rather than his person or his clothes. It may be objected that the diphtheria bacilli cannot resist a temperature greater than 50 C. (122 F.) and that they would have been killed when the bread was baked. Nevertheless it seems reasonable to admit that the bacilli were not in the dough but on the surface of the loaves. In fact after the bread was taken from the oven it was placed for a time in the bakery which connected with the sleeping-room of the baker's wife and son. Besides, disinfection of the bakehouse and the houses of the patients put a stop to the epidemic, which confirms the supposition that the house was the focus of infection. Although this manner of spreading disease may be rare, it is worthy of consideration when an epidemic springs up among persons who have no apparent mutual relations and when no other cause can be discovered.

Effrontery of a Pharmaceutical Specialty House

Profiting by the agitation raised in the medical profession through discussion of the obligatory reporting of tuberculosis, a pharmaceutical specialty house sent physicians a circular containing a resolution passed by the Syndicat des médecins de la Seine in connection with this subject; accompanying the circular was an advertisement. Moreover, a postcard was enclosed to be sent to the minister of the interior with an expression of opinion for or against the reporting of tuberculosis, and on this card was an advertisement for one of the products of the house. The administrative council of the Syndicat des medécins de la Seine will shortly consider taking measures to prevent the renewal of such a method of advertising done without the knowledge of the *syndicat* and liable to be misconstrued by the profession.

Alcoholism and Lunacy

Since 1867 all the insane in Paris and in the department of the Seine before being admitted to the various asylums have been sent to the clinic of Sainte Anne for a preliminary examination. Each patient has a separate record in which are kept

the physicians' certificates, the clinical findings, the information given by the parents of the patient, etc. From these documents Dr. Magnan, physician-in-chief of the Sainte Anne asylum, and Dr. Filassier have taken those which give information as to the effects of alcohol on the individual and his offspring. The findings are instructive. From 1801 to 1868 the number of women admitted into the asylums was greater than that of men, but the proportion of alcoholic insane men is greater than that of alcoholic insane women. The number of the alcoholic insane increases from year to year with an astonishing rapidity. In 1868, of the total number admitted, 14 per cent. of alcoholic insane were men and 1.85 per cent. women. In 1886, 22 per cent. were men and 5.88 per cent. women. Since 1887 the statistics have included not only those whose insanity is due simply to alcoholic excess, but also the insane descendants of alcoholics, and those in whom alcohol has simply been the means of disclosing their mental unsoundness. The figures show a shocking condition: in 1888, 35 per cent. were men and 12 per cent women; in 1898, 41 per cent. men and 16 per cent. women; in 1910, 47 per cent. were men and 20 per cent. were women.

The late Dr. Bourneville collected statistics in regard to the descendants of alcoholics. The figures show that in 3,271 children in his service, 1,156 had alcoholic fathers, 100 had alcoholic mothers, and fifty-three had both fathers and mothers who were alcoholics; in 538 it was not possible to obtain information. The fathers and mothers of the other children were temperate. According to Drs. Magnan and Filassier these figures are now below the true figures, especially concerning alcoholism in the mother, which unfortunately is becoming more and more frequent. Of every thousand infants of alcoholic parents about a third die at birth or in the first two or three years of life and among the survivors are numerous idiots, epileptics, degenerates and moral perverts.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 3, 1913.

Personal

Professor v. Oppenheim of Berlin has been appointed honorary member of the Società Italiana di Neurologia of Rome.

The Number of Insane in Prussia

As in other years, the number of patients in the Prussian asylums for the insane was again increased in 1910. There were 127,914 patients (71,277 males and 56,637 females) as compared with 57,191 as the average for the period between 1891 to 1900, and 34,781 as the average for the period of 1881-90. As will be noted, the increase in 1910 amounted to 2,733 patients, which really is less than in the previous years. The official report calls attention to the fact that it is not possible to conclude from this continual increase that the number of insane is growing. While it cannot be denied that modern life with its nervous strain is the cause of a greater number of mental diseases, it must also be considered that insane asylums are now more frequently resorted to than formerly, since the aversion against these has disappeared and the good results of hospital treatment are being recognized.

Physicians in Germany in 1912

The medical statistician Prinzing of Ulm published, as in other years, in the last number of the *Deutsche medizinische Wochenschrift* a statistical report as to the number and distribution of physicians in Germany in 1912. These statistics were compiled from the medical directory published annually by Prof. J. Schwalbe of Berlin. There were in Germany 33,527 physicians in 1912. According to official statistics, the population of Germany in the middle of 1912 was 66,303,000; accordingly, there were for each 10,000 inhabitants 5.06 physicians. The increase is greater than in the previous year. About a hundred physicians of the total sum should not be counted, as there are about that many who practice in summer in health resorts and in winter in other cities, and consequently they are counted twice. In 1901 the number of physicians amounted to 27,978, or for each 10,000 inhabitants there were 4.92 physicians.

The number of licenses issued in 1910-11 was much greater than in the previous years; namely, in 1909-10 there were issued 945 licenses and in 1910-11, 1,047. The number of medical preliminary examinations has also been markedly increased in the last few years. While it amounted in 1906-07 to 1,038, it was increased in 1907-08 to 1,335, in 1908-9 to 1,461, 1909-10 to 1,713 and in 1910-11 to 1,858.

INCREASE IN MEDICAL STUDENTS

The number of medical students is also continually increasing. There were in the summer semester of 1905, 6,032; in the winter semester 6,080; in the summer semester of 1911, 11,927; in the winter semester of 1911, 12,446, and in the summer semester of 1912, 13,380. The increase is so great that the number of foreigners, which is also continually increasing, does not affect in any way the enormous increase of German medical students. In the summer of 1909 there were among the medical students of German universities 1,091 foreigners, in winter of 1909-10, 1,491, in summer 1910, 1,499, in winter 1910-11, 1,774, and in winter 1911-12, 1,979.

PHYSICIANS IN THE LARGE CITIES

So far as the individual sections of the country are concerned, an increase of physicians is noted everywhere since the previous year, with the exception of Hessen, Braunschweig and Anhalt. The movement of physicians toward the big cities, which was on a decline during the last few years, is observed again this year in its full extent. The large cities had in 1911, with a population of 14,633,000, 13,866 physicians, or for each 10,000 inhabitants, 9.5.; in 1912, with 14,980,000 of population, 14,981 physicians, or for each 10,000, 10 physicians. The remaining portion of Germany had in 1911, with a population of 50,774,000, 18,969 physicians, or for each 10,000 inhabitants, 3.7, and in 1912, with 51,323,000 of population, 18,546 physicians, that is, for each 10,000, 3.6 physicians. Hence, while the number of physicians in the large cities has increased by 1,115, in other parts of Germany it has decreased by 423.

During the last few years, the increase of physicians in greater Berlin was a little smaller than the increase of population, so that the proportional number of physicians has somewhat decreased, but in 1912 it again increased. In other large cities the number of physicians for 10,000 inhabitants was the greatest in Wiesbaden (in 1911, 24.3, and in 1912, 25.1), and the smallest in Hamborn (in 1911, 2.6, and in 1912, 2.0.).

CONTRACT PRACTICE

On the whole, every year the same conditions are observed. The small number of physicians in the manufacturing cities of the kingdom of Saxony, the Rhine provinces and Westphalia is conspicuous. This observation proves the well-known fact, that in places where physicians have to depend solely on the Krankenkassen population only few will find sufficient income.

MEDICAL WOMEN

The number of women physicians was 151, which shows a great increase. There were in 1908, 55 women physicians; in 1909, 69; in 1910, 102, and 1911, 118. Of the 151 medical women, 124 resided in large cities. They were distributed as follows: 64 in eastern Prussia, 34 in the western part, in the rest of northern Germany 9, in the kingdom of Saxony 10, in Bavaria 17, Würtemberg and Baden each 6, Hesse 3 and in Alsace-Lorraine 2. The number of women medical students in Germany is continually increasing. In 1909 it amounted to 371; in 1910 to 527, and in 1911 to 582; in this foreigners are included.

SPECIALISTS

The growth of specialism deserves a special notice. This thrives mainly in the large cities, although specialists are to be found also in all the smaller cities. A great number of specialists carry on general practice in addition to their specialty, although it is beginning to be more and more recognized that only those physicians who give up general practice have the right to the name of specialists. Among the specialists, the gynecologists are by far the most numerous. If we compute the number of surgeons with that of the physicians who practice surgery in connection with gynecology and orthopedics, the number would follow that of the gynecologists; then follow ophthalmologists, ear, nose and throat specialists, and finally dermatologists and pediatrists. An exact enumeration is not possible, as many of the specialists practice several specialties. Compared with the previous year the number of specialists increased in 1912 by 6.6 per cent; especially a great increase is noted among the gynecologists, whose number increased by 10.1 per cent. Also the number of surgeons and pediatrists increased more than the total number of specialists (by 7.5 to 7.7 per cent.) to the relative number of specialists. This depends on the patronage and prosperity of the population, the scope of the field of practice, the relative attendance of medical societies, and other similar reasons. As compared with the previous year, the number of specialists was markedly increased in several cities, as many of the physicians who are just set-

tling in these places take up specialties. In Munich also many of the old resident physicians have taken up specialties, and in Kiel the great increase is due to the fact that the assistant physicians of the university heretofore did not receive the titles indicating their specialties.

LIFE EXPECTANCY

Following the great number of medical students and the sudden increase of medical preliminary examinations, there is to be expected in the next few years a considerable growth in the number of young physicians. The number of licenses, which amounted in 1910-11 to 1,047, can be estimated for 1911-12 at more than 1,300 and in 1912-13 at 1,400 or 1,500. In consequence of the great additional supply of physicians back in the 80's and 90's the profession was provided with new, younger forces. How this affects the life expectancy can be seen in the statistics for Würtemberg in regard to the ages of physicians:

	Würtemberg 1896	Würtemberg 1911	Germany 1907
Physicians of less than 25 years	2	..	465
25-30 years	132	63	4,341
30-40 years	302	368	11,735
40-50 years	184	356	9,445
50-60 years	86	187	3,728
60-70 years	61	91	1,583
70 and over	34	46	584
Age not known	..	..	17
Total	801	1,111	31,898

The mortality of the whole population and with it of course also that of physicians is comparatively decreasing.

GENERAL OUTLOOK

The prospects of the many who expect to join the profession within the next few years are not very promising, especially when it is considered that the field of practice is being continually more and more limited by the increase of hospital treatment, the methods of tuberculosis therapy, operations of internal malignant tumors, by the decrease of contagious diseases and many other causes.

Cleanliness of Hands Among School Children

A school physician of Charlottenburg has published a very interesting article on the important question of cleansing the hands of school children. He calls attention to the fact that at the present time there are shower-baths in the school buildings in 216 places in the German empire, while arrangements for washing for the simultaneous use of a number of pupils are found only in seventy-three places. This is not a proper condition of things, for, aside from the cleansing and hardening of the entire body, the cleansing of the hands of school children is in many respects even of greater importance than the baths. A shower-bath once a week is sufficient for children, but the hands should be thoroughly cleansed many times a day, especially before meals. The possible ways in which soiling of children's hands may contribute to the transmission of diseases are easily understood. It is necessary that in the first place all toilets should be provided with arrangements for washing; further, that there should be on each floor of the school building at least one opportunity for washing.

LACK OF SUITABLE SOAP

According to the author, one reason for the insufficient use of the facilities at hand is that heretofore there was no soap appropriate for school purposes. The bars of soap that are ordinarily used in families are not suited for use in schools, as they can easily be taken away or thrown on the floor and become crushed. Soap which is commonly fastened to chains in the toilets of restaurants is not suitable. It breaks easily, and as a rule only half of it can be utilized; further, it does not permit thorough cleansing, and consequently it is too expensive. Liquid soaps require too complicated apparatus. The soap paper and soap tablets used in travel are too small and too dear. The same is true of the pieces of soap furnished in the toilets on trains. To place green soap in a dish next to the wash-basin is not feasible, because the floor may be soiled with the suds and thus become slippery, and besides this soap irritates severely the skin of children. The author is of the opinion that the last-mentioned forms of soap should be always considered at first, but still that there should be invented a cleansing article which would be larger and rougher so as to effect a more thorough scouring of the hands of children than is possible with the soaps mentioned.

LOOFA-SPONGE SOAP

As a result of experiments he found that pieces of loofa-sponge (fibers of the sponge gourd) saturated with soap solution answered very well for the purpose of cleansing the hands. The small pieces of sponge take up easily the soap solution and emit it again on moistening with water; they have a good scouring action and the hands of the dirtiest child may be cleansed with it without any trouble. They fit the hand well, and may be used like a nail brush for the cleansing of the space under the nails. Each child when he wishes to wash his hands receives a piece of loofa-sponge, measuring about 1.5 square inches, impregnated with soap, which serves for a single washing. In this way it is possible, where there is suitable accommodation for simultaneous washing, that several children can wash their hands thoroughly at the same time. Near each washing apparatus a receiver must be placed in which the used pieces of loofa can be deposited. The loofa soap can be kept in boxes in the class-room closets, or the pieces of loofa-sponge may be hung up on a wire. The loofa-soap has been used successfully in two public schools. It is necessary to instruct the children how to use the soap. There are, however, marked difficulties in the way of a general introduction of loofa-soap. The soap factories refuse to make it wholesale, because the manufacture is costly and unprofitable.

TOWELS

In the opinion of the author, the towel question seems to be less difficult than the soap question. Towels can be furnished by the school, but should be changed more frequently than is usually the case. Paper towels are also suitable. A prize offered in 1911, by the German society for public baths, for securing the best suitable paper towels will probably lead to progress in this direction. Pupils of the higher classes may very well use their own towels. The towel may be easily carried in the portfolio which the child uses for his books.

Infant Hygiene in Army Families

In Strasburg an organization has been formed among the married men of the garrison at that place for furthering infant hygiene in order to reduce the infant mortality. Every married man in the garrison, except the higher officers, receives at the birth of a child a leaflet in which, in addition to advice with reference to the care and nourishment of the child, the attention of the mother is directed to the necessity of bringing her child at regular intervals to the station for infant hygiene at the post hospital. The persons in charge of the station are informed by the commanding officer of the troops as to the births, whereupon the physician in charge of the station visits the parents at their home in order to give them oral instruction and see to it that the mother, if practicable, nurses the child herself. At the same time he emphatically repeats the injunction that she shall visit from time to time the infant consultation station. Notwithstanding, there are occasions when the dilatory ones have to be notified by means of a postal card. It is proposed to install a nurse as assistant. In a similar way as the nursing premiums are distributed in other places, help is extended only to those who have previously brought their children to the infant welfare station. The number of such children born within a year amounts to about two hundred.

A Peculiar Case of Fake Treatment

The following case, which was reported in a Saxony trade journal, shows that quackery flourishes also in Germany in spite of all the efforts of physicians and authorities to enlighten the public. In one of the smaller cities of Saxony there came to the home of a workman's wife a stranger, a fairly well dressed man, who presented himself as a physician from the neighboring city. The woman showed him her eleven-year-old son who suffered from nervousness, and the "doctor" proposed to treat him with massage. The treatment was performed at once. Three days later the "doctor" came again to repeat the treatment. On this occasion he told the woman that she also was sick. He began to give her also massage. In this way he claimed to find that the woman was suffering from cancer, which could be removed only "if her nature should be united with his." The woman believed him (in true Boccaccio style), let him do as he liked and paid the money he asked for his "work," 1.50 marks. The case is not fictitious; even names and the address are given in the trade paper. [This method is said to be used by a well-known magnetic healer in the middle West of the United States—founder of one of the many isms of the kind—for the alleged purpose of transferring vitality from his "stronger nature" to women and girls among his patients who can be induced to allow it.]

Miscellany

Posology

The determination of the proper dose of medicine is one of the most difficult problems of the art of therapeutics. Schools of medicine have differed over the principles of dosage, and individual practice has varied from the infinitesimal through all degrees of therapeutic efficiency to such large doses as can only do harm by their toxic action. The dosage should vary according to the purpose for which the remedy is given. It is a good plan to follow the principle laid down by Manquat to give the smallest efficacious dose. Especially is this the case when the object is to stimulate the function of an organ, as overstimulation may lead to irritation and defeat its object. In this connection it is wise to consider other circumstances than drugs which may increase the desired function or may lessen the need of it. As Manquat (p. 82) says:

"We should like to note that it is not good practice to seek to secure complete functional correction by means of drugs. If the organism is placed, through hygiene, under the conditions of optimum of function, a small dose of medicine often suffices to bring about restoration of the disturbed function. It is often better to be content with improvement and modestly live according to appropriate hygiene rather than to seek the medicamental triumph of complete functional restoration which will not last. A patient with mitral stenosis, for instance, who knows enough not to ask of his heart more than it can give, will have the greatest chances of continuing long without the aid of medicinal assistance; and when one is at last obliged to resort to digitalis, minute doses, as has been shown by Dr. Huchard, are to be prescribed. To content oneself with producing diuresis, through theobromin, in a patient suffering from renal insufficiency would be a reprehensible practice; it is better, first, to restrain all the endogenous and exogenous intoxications, and prescribe only small doses of the diuretic remedy, which can be repeated whenever necessary. The patient's mode of life and alimentation should first of all be adjusted to their functional forces, while medicinal intervention should be regarded as a therapeutic adjunct.

"There is a case, however, in which a large dose is demanded from the beginning, that is, in the presence of an accident immediately menacing life when an active medicament alone can restore the adequate function of the failing organ. Such is in particular the case in cardiac asthenia capable of endangering life, or in an alarming dyspnea, or in sudden anuria, in which large functional doses are necessary. There should be no hesitation in seeking energetic action, unless some positive contra-indication exists. The patient's salvation may depend on such action."

Control of Epidemics

In a short editorial under this heading, the Chicago *Journal* gives the principles that should govern. As they apply to any community they are worth quoting:

"The outbreak of contagious diseases in this city can be stopped if parents, physicians and health authorities will work together. Lack of cooperation on the part of any of these means longer life to the epidemic and shorter life to children.

"Parents should take no chances with a 'simple sore throat.' In these days, no epidemic starts from a frank, virulent case of diphtheria. It always begins with some case so mild as to escape diagnosis and treatment. If your child has a sore throat, call a doctor at once.

"Physicians should report all contagious cases promptly; and never should allow themselves to 'guess' whether a case is contagious or not. When in doubt, leave it to a microscope.

"Physicians and health authorities should combine to give the public the benefit of all doubt, in cases whose character is uncertain. No serious harm is done by isolating for a few days a doubtful case which proves to be non-contagious. Twenty deaths may result from failing to isolate a doubtful case that proves to be diphtheria or scarlet fever.

"The death of children in epidemics which can be prevented or stamped out is the worst sort of race suicide."

This is not bad for a lay journal.

The Effective Range of Infection.—Here is then the first concrete fact emerging, a human focus—a man suffering from the disease—is essential in most, if not all, of those diseases requiring an intermediate host, before another case, or series of cases, can be infected. This fact clearly has the effect of narrowing the epidemiological horizon. For a long list of diseases it must now be considered as a fundamental article of belief that no second case can occur, no epidemic can break out, unless there is at the beginning one initial case of the disease in a human. For such diseases as the commoner exanthemata and the venereal diseases there can be no dispute on the point; while from primeval chaos bacteriologists and parasitologists have now crystallized the axiom of the necessity for a pre-existing case in such diseases as malaria, filaria, typhus, trypanosomiasis, etc. There are, however, exceptions to this generalization that for the maintenance of infectious disease it is essential that human foci be forthcoming. Such diseases as tetanus, hydrophobia, glanders, anthrax, stand out prominently to remind one that in Nature there is no rule universally applicable, and for such all that can be said is that their intrinsic peculiarities must be noted, not as affecting the main argument, but as serving to remind us that there may be more things in heaven and earth than our epidemiology dreams of.—J. H. L. Cumpston in *Australasian Med. Gaz.*

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE CHOLOGEN TREATMENT FOR GALL-STONES

The proprietary Chologen is interesting some of our readers and several have sent us samples and literature. Dr. Philip Marvel, Atlantic City, N. J., for example, writes:

"By the way, I am to-day sending you by mail a package which the Council on Pharmacy and Chemistry may care to tackle, or it may not. I shall not be insulted any way, but since these chologen preparations are being used a good deal by various globe trotters, who sometimes hook up for a short stay here, I feel it might be of some interest to know 'what fools these mortals be' and how much the profession is being fooled with them."

Chologen as a medical treatment for gall-stones has been before the German public for a number of years, and it is somewhat singular that so simple a method, which could be easily prescribed by the physician if it had merit, should exhibit such remarkable vitality in proprietary form in spite of evidence going to show that it rests on erroneous principles. The Council rejected it as an unscientific mixture. The treatment is somewhat liberal, consisting of the use, in varying successions, of three kinds of tablets: No. 1, calomel and podophyllin; No. 2, calomel, and No. 3, calomel, podophyllin, camphor and menthol. The proprietors tell us that the treatment should be proceeded with in spite of disturbances, such as diarrhea and pain in the abdomen, and that it should be repeated regularly at intervals for some years, so long as any trouble exists or recurrence is threatened. "A course" of Chologen tablets should be taken two or three times a year, No. 1 being given for ten days, then Nos. 1 and 2 for forty days and No. 3 for ten days.

It is worthy of note that experimental work seems to have been performed in the attempt to show that bile produced by this remedy will cause the disintegration and solution of gall-stones. Normal bile has a certain solvent action on gall-stones, but calomel and podophyllin have no demonstrable effect in

increasing the amount of bile. We had imagined that these facts were generally known.

It is somewhat discouraging to reflect that some physicians entertain so low an estimate of their ability to prescribe such well-known remedies as calomel and podophyllin that they must use them in the fixed combinations provided by Dr. Glaser. If the self-respecting physician does not consider himself insulted by a proprietary manufacturer who presumes to tell him how to use such well-known remedies, this is a good sign that he needs to take a postgraduate course in materia medica and elementary prescription-writing. We feel that medical writers must be short of subjects when they devote papers to the exploitation of proprietaries consisting of these simple ingredients.

THE DANGER IN PROTONUCLEIN, A PREPARATION CONTAINING THYROID

Protonuclein was the subject of a little article in our Queries and Minor Notes Department, Nov. 16, 1912, page 1812. Dr. Reid Hunt, Washington, D. C., writes:

"*To the Editor*:—I have been requested by a physician to call your attention to certain statements which might well have been added to your reply to J. A. C. in regard to Protonuclein. Dr. Seidell and I examined several samples of Protonuclein some time ago[1] and by chemical and physiologic tests found that they contained the equivalent of 10 per cent. thyroid of 0.1 per cent. iodin strength (the actual amount of thyroid may have been greater or less for we did not know the percentage of iodin in the thyroid used). The dose recommended on the bottle was 6 to 12 grains every three or four hours; this represents from 0.6 to 1.2 grains of some of the commercial thyroid powders, and is sufficient to cause pronounced thyroid effects in many conditions. Protonuclein was advertised as a 'perfectly harmless antitoxin, tissue-builder,' etc., although the dose of thyroid did not differ materially from that in 'Rengo' and 'Marmola,' two anti-fat nostrums which we examined at the same time. We called attention to the danger of using thyroid, the most powerful tissue-destroying drug known, in cases of typhoid, pthisis, etc., for which protonuclein was recommended, though these are conditions in which the physician is supposed to be exerting every effort to build up the tissues.

"You also speak of the 'high' nuclein content (0.28 per cent. phosphorus): the largest recommended dose would contain only about ⅛ grain of nucleic acid—an amount which would probably have not the slightest effect, especially when given by the mouth.

"A sample of 'Protonuclein Special' was found to have twice as much thyroid as the ordinary Protonuclein; this also was stated to be 'perfectly harmless.'"

FULTON'S DIABETIC COMPOUND

We recently[2] had something to say about Fulton's Diabetic Compound. The following letter from Dr. O. C. Reiche, Macungie, Pa., dated Jan. 18, 1913, is of interest in this connection:

"I note the inquiry of Dr. George Y. McCracken, in the current issue, relative to Fulton's Diabetic Compound. I, also, am interested to know what is in the stuff that causes patients to have such blind, misplaced faith in it. Some months ago I had occasion to examine an applicant for life-insurance, and during the examination he admitted that he had been refused by a life-insurance company several years before on account of having diabetes mellitus and that he promptly placed himself under the care of a physician with no resulting improvement. Then his attention was called to this wonderful (?) stuff above mentioned and on taking he 'immediately improved.' On being questioned, however, he admitted that he was still losing weight and still passing large quantities of urine. Yet, he 'immediately improved.' Needless to add, the specimen of urine he gave me contained an enormous amount of sugar. I see this man occasionally and he is virtually a shadow of his former self—yet, he 'immediately improved'!"

1. Hunt, Reid, and Seidell, Atherton: Commercial Thyroid Preparations and Suggestions as to the Standardization of Thyroid, THE JOURNAL A. M. A., Oct. 24, 1908, p. 1385.
2. THE JOURNAL A. M. A., Jan. 18, 1913, p. 225.

"THIS PHYLACOGEN BUSINESS"

We reproduce below an advertisement that Parke, Davis & Co. are publishing in the drug journals of the country. We do this free of charge. Read it carefully. It may help you to realize how our profession—and through it the public—is being exploited by some pharmaceutical houses. In the editorial department, this week, something is said about "this Phylacogen business"—and, by the way, "business" is a most appropriate word to use in this connection. Parke, Davis & Co. have taken a dangerous and unproved agent—one that has not passed the test of scientific investigation—and are putting it on the market apparently with but one object in view, that of forcing it on the profession. Every medical journal of importance that accepts this kind of advertising is getting some of "this Phylacogen business;" every pharmaceutical journal,

Don't you want some of this Phylacogen business?

Here is the most important announcement that we have made to druggists in many months:

We are on the eve of a great promotion campaign on behalf of the Phylacogens—a campaign that will be continent-wide.

We shall publish a series of pointed, striking Phylacogen advertisements in a hundred medical journals.

To every physician on our American mailing list we shall send attractive, convincing Phylacogen literature.

Through our army of detail representatives we shall carry personal Phylacogen messages to the entire medical profession.

We shall use every legitimate means at our command to make known to physicians the remarkable efficacy of the Phylacogens.

This means orders from the doctors. It means a lot of good business for druggists. Don't you want to share in the profits?

Five Phylacogens are now offered:

Rheumatism Phylacogen
Gonorrhea Phylacogen
Erysipelas Phylacogen
Pneumonia Phylacogen
Mixed Infection Phylacogen

Marketed in vials of 10 Cc. capacity, 10 vials in a package.

LET US HAVE YOUR ORDERS

Home Offices and Laboratories, Detroit, Michigan

Parke, Davis & Co.

"This Phylacogen Business." This is a reduced facsimile of a full-page advertisement appearing in drug journals. In the medical journals advertisements are appearing that claim "60 per cent. of recoveries" in "over 4,000 cases of infection that have been treated with Phylacogens."

also, is getting some of "this Phylacogen business;" every uncritical physician who is willing to gamble with his patients' health is getting some of "this Phylacogen business." And the public? Well, the public doesn't matter. Hundreds of thousands of dollars' worth of Phylacogen will be sold; thousands of testimonials will flow in from unthinking physicians; the administration of Phylacogen will become a fad—all to the great financial benefit of Parke, Davis & Co. Then, like most proprietary rockets that describe a blazing parobola across the therapeutic heavens, it will come down, the inevitable stick. The public will forget it; the medical profession will discard it—and the corporation of Parke, Davis & Co. will, figuratively speaking, unctuously rub its hands and murmur: Good business while it lasted!

Marriages

WILLIAM KRAUSS, M.D., Memphis, Tenn., to Miss Mary Louise Baxter of Nashville, Tenn., December 24.

FRANK LOUIS BROWN, M.D., to Miss Bernice Elizabeth Oswald, both of Chicago, January 29.

GEORGE HARRY COULTHARD, M.D., to Miss Erva L. Trow, both of Idaho Falls, Ida., recently.

CLYDE CALVIN ROLLER, M.D., to Miss Frances Belle Kempel, both of Ashtabula, O., January 22.

WILLIAM C. BRYANT, M.D., McKinney, Tex., to Miss Nannie Greer of Anna, Tex., January 12.

CLAUDE W. STRAIT, M.D., Birta, Ark., to Miss Ruby Connor of Memphis, Tenn., January 15.

MOZART MONAE LESSER, M.D., to Miss Isabelle Taylor, both of New York City, January 4.

HENRY BELL KLIE, M.D., Forkland, Ala., to Miss Ruby Peach of Selma, Ala., January 2.

Deaths

Wolfred Nelson, M.D. University of Bishop College, Montreal, 1872; McGill University, Montreal, 1884; for many years a member of the faculty of the College of Physicians and Surgeons in the Province of Quebec; a member of the special sanitary commission sent to Cuba in 1904 to investigate sanitary conditions in that island, and for his services in this capacity made a commander in ordinary of the Royal Order of Isabella the Catholic; a member of the American Association for the Advancement of Science and a fellow of the Royal Geographical Society of London; since 1900 a practitioner of New York; an expert on sanitation with especial reference to yellow fever and other tropical diseases; died at the Hudson Street Hospital, New York City, January 15, from pneumonia, aged 66.

Frank Lorenzo McKee, M.D. Bellevue Hospital Medical College; 1882; of Wilkes-Barre; a member of the American Medical Association; colonel of the Ninth Infantry, N. G., Pa.; coroner of Luzerne County for two terms; for several years in charge of the first aid work in the anthracite coal region; in charge of the commissary and sanitary department during and after the Johnstown flood; supreme medical examiner of the Heralds of Liberty; died in the City Hospital, Wilkes-Barre, January 13, a week after an operation for appendicitis, aged 52.

James R. Mudd, M.D. Washington University, St. Louis, 1872; a member of the American Medical Association; of St. Charles, Mo.; for several years local surgeon for the Wabash Railway; coroner of St. Charles County for twelve years and county physician for twenty-one years; a member of the American Association of Railway Surgeons; once mayor of St. Charles and a bank director; who was operated on in Deaconess Hospital, St. Louis, recently; died in St. Joseph's Hospital, St. Charles, January 14, aged 63.

Simeon Bishop Bell, M.D. Starling Medical College, Columbus, O., 1853; a surgeon of volunteers during the Civil War; through whose donation of land and money in 1893, the establishment of the University of Kansas Medical School became possible; who built, six years ago, on land donated by him, the Eleanor Taylor Bell Memorial Hospital; a resident of Rosedale, Kan., for nearly half a century; died at his home, January 16, from injuries sustained in a fall, two weeks before, aged 92.

Francis W. Mead, M.D. University of Georgetown, Washington, D. C., 1858; a member of the American Medical Association and Association of Military Surgeons of the United States; who went into the United States Public Health and Marine Hospital Service in 1878 and passing through the various grades was made surgeon in 1890; died at his station, the Marine Hospital, Vineyard Haven, Mass., January 18, from pneumonia, aged 74.

George Franklin Hanson, Ph.G., M.D. Cooper Medical College, San Francisco, 1885; of San Francisco; assistant professor of materia medica and therapeutics in his alma mater for several years, and professor from 1897 to 1912; a member of the staff of the Lane Hospital and prominent in the National Guard of California; died suddenly from heart disease, in Stockton, Cal., January 7, aged 56.

Orville Horwitz, M.D. Jefferson Medical College, Philadelphia, 1883; emeritus professor of genito-urinary surgery in his alma mater; formerly surgeon to Jefferson Medical College Hospital, St. Agnes Hospital, the State Hospital for the Insane and Philadelphia General Hospital; consulting surgeon to the Jewish Hospital; formerly a member of the American Medical Association; a member of the Philadelphia College of Physicians, American Surgical Association, American Association of Genito-Urinary Surgeons and American Urological Association; died at his home in Philadelphia, January 28, from spinal sclerosis, aged 52.

Alexander Proudfoot, M.D., C.M. McGill University, Montreal, 1869; formerly professor of ophthalmology and otology in Bishop's College, Montreal; for several years a specialist on diseases of the eye and ear in Chicago; a member of the British Columbia Medical Association; surgeon during the Franco-Prussian War; died suddenly in Los Angeles, Cal., January 17, aged 65.

James W. Robertson, M.D. Detroit Medical College, 1877; a member of the American Medical Association; for several terms mayor and a member of the School Board of Litchfield; surgeon to the Litchfield Hospital; once president of the Minnesota State Medical Association; died January 14, a week after an operation for appendicitis, aged 60.

Charles James Lane, M.D. Philadelphia University of Medicine and Surgery, 1864; acting assistant surgeon, U. S. Army, during the Civil War; twice justice of the peace of Marshall, Mich.; coroner of Calhoun County from 1910 to 1912; died at his home in Marshall, January 5, from marasmus, following a cerebral hemorrhage, aged 75.

James Francis Bothfield, M.D. Boston University School of Medicine, 1888; formerly assistant superintendent of the Westboro (Mass.) Insane Hospital, but since 1895 a practitioner of Newton and a member of the surgical staff of the Newton Hospital; died in a hospital in that city, January 12, from the effects of influenza, aged 47.

Joseph McFarland, M.D. Cleveland University of Medicine and Surgery, 1852; a veteran of the Civil War and a Methodist clergyman since 1866; surgeon of the Fifty-Fifth Battalion Infantry, O. V. M., during the Civil War; died at his home in Bloominggrove, O., January 5, from senile debility, aged 86.

Edgar Charles Syrett, M.D. University of Vermont, Burlington, 1898; physical director for the university during his work there; chairman of the board of health of West Springfield, Mass., for several years and also medical inspector of schools; died at his home, January 5, from pneumonia, aged 40.

Elmer E. Lamb, M.D. Detroit College of Medicine, 1886; a member of the American Medical Association and for fifteen years surgeon for the Republic Iron Company and in charge of the Republic Mine Hospital, Republic, Mich.; died at his home, January 10, from pneumonia, aged 50.

Albert W. Dierking, M.D. Louisville (Ky.) Medical College, 1896; of Oolitic, Ind.; a member of the American Medical Association; while attempting to board a Monon passenger train, near New Albany, January 11, was run over and instantly killed, aged 42.

Robert John Price, M.D. University of Maryland, Baltimore, 1866; for many years physician to the Dorchester County Alms House and a member of the County School Board; died at his home in Vienna, Eastern Shore, January 15, from cerebral hemorrhage, aged 74.

Joseph W. Winsborough (license, Missouri, 1884); for several years assistant surgeon for the Western Division of the Chicago and Alton Railroad; a resident of Missouri since 1874; died at the home of his son in Kansas City, January 10, from senile debility, aged 81.

Henri Hervieux, M.D. Victoria College, Coburg, Ont., 1886; of Montreal; professor of internal pathology in Laval University, Montreal; who sailed for Europe for the benefit of his health, December 4; died on the steamship *Rochambeau*, while returning home, recently.

Benjamin Thomas Winchester, M.D. University of Maryland, Baltimore, 1875; president of the Winchester Manufacturing Company, makers of medical supplies; died at his home in Windsor Mills, Maryland, January 14, from tuberculosis, aged 61.

Robert Bradlee Welton, M.D. Harvard Medical School, 1868; a member of the Medical Society of the State of New York; of Brookline, Mass.; died in the Long Island College Hospital, January 8, after a surgical operation, aged 69.

Albert Clarence Shaw, M.D. Medical College of Ohio, Cincinnati, 1900; Rush Medical College, 1908; died at his home in Eaton, O., January 12, from tuberculosis, which followed a fall and injury of the knee in 1907; aged 45.

Frederick William Kuhn, M.D. Long Island College Hospital, Brooklyn, N. Y., 1896; for several years surgeon of the Richmond Hill (L. I.) Fire Department; died at his home in Morris Park, L. I., January 8, aged 41.

Samuel S. Leith, M.D. Northwestern University Medical School, Chicago, 1899; a member of the State Medical Society of Wisconsin; died at his home in Junction, January 10, from cerebral hemorrhage, aged 44.

Thomas Samuel Murdock, M.D. University of Michigan, Ann Arbor, 1865; for many years a practitioner of Northville, Mich.; died in Ypsilanti, Mich., January 13, from cerebral hemorrhage, aged 74.

James M. Gray, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1883; Kansas City (Mo.) Medical College, 1893; died at his home in Hutchinson, Kan., about January 7, aged 50.

Jasper Newton Sims (license, Indiana, 1897); a member of the Indiana State Medical Association; died at his home in Doverhill, Ind., January 3, from cerebral hemorrhage, aged 60.

Robert C. Alexander, M.D. College Physicians and Surgeons, Keokuk, Ia., 1883; of Nevada, O.; was found dead near Wyandotte, O., January 10, from cerebral hemorrhage, aged 63.

John Calvin Young, M.D. Beaumont Hospital Medical College, St. Louis, 1899; formerly of Roanoke, Ill.; died in Phoenix, Ariz., Nov. 10, 1912, from tuberculosis, aged 42.

George S. Liggett, M.D. Washington University, St. Louis, 1876; a member of the American Medical Association; died at his home in Oswego, Kan., January 11, aged 59.

James L. Quinn, M.D. Miami Medical College, Cincinnati, 1869; coroner of Preble County, O.; died at his home in Eaton, January 7, from bronchial asthma, aged 71.

William H. Jones, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1874; died at his home in Forest City, Ia., January 12, from cerebral hemorrhage, aged 68.

J. F. J. Patten, M.D. Victoria University, Coburg, Ont., 1868; since 1880 a practitioner of St. George, Man.; died at his home, Nov. 15, 1912, from heart disease, aged 67.

Thomas Hawkins Stull, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1877; died at his home in Algona, Ia., January 4, from cerebral hemorrhage, aged 60.

P. Edward Thibodaux, M.D. Tulane University, New Orleans, 1892; of Montegut, La.; died suddenly in Houma, La., January 6, from valvular heart disease, aged 52.

Henry Woodward Jones, M.D. Detroit Medical College, 1874; of New York City; died at his home in White Plains, N. Y., January 14, from diabetes, aged 65.

Jonathan Wingate Winkley, M.D. College of Physicians and Surgeons, Boston, 1894; died at his home in Boston, Nov. 20, 1912, from acute gastritis, aged 81.

Nicholas Louis Talbot, M.D. Miami Medical College, Cincinnati, 1876; died at his home in Austin, Neb., Dec. 25, 1912, from progressive paralysis, aged 62.

Francis G. Arter, M.D. Rush Medical College, 1868; for twenty-four years a practitioner of Chicago; died at his home in that city, January 22, aged 74.

Artemesia Brumback Winter, M.D. Physio-Medical Institute, Cincinnati, 1883; (license, Ohio, 1896); died at her home in Newark, O., January 10, aged 67.

Mortimer Hall Clarke, M.D. Boston University School of Medicine, 1888; died at his home in Auburndale, Mass., about January 14, aged 52.

Edward Perry Bowles, M.D. College of Physicians and Surgeons, New York City, 1874; died at his home in Wolfville, N. S., Nov. 20, 1912.

May McClaren Judy, M.D. Kansas City (Mo.) Hahnemann Medical College, 1909; died at her home in Kansas City, January 4, aged 37.

William Jacob Wagner, M.D. University of Toronto, 1870; died at his home in Toronto, January 10, from nephritis, aged 63.

Significance of Uncomplicated Spastic Paraplegia.—An uncomplicated spastic paraplegia should suggest in the child cortical disease, in the adult disseminated sclerosis.—Judson S. Bury in *Clin. Jour.*

Correspondence

Dr. Cabot's Findings and Croftan's Criticisms

To the Editor:—Allow me to express my approval of Dr. Croftan's letter (The Journal, Jan. 11, 1913, p. 145) concerning Dr. Cabot's paper ("Diagnostic Pitfalls," The Journal, Dec. 28, 1912, p. 2295).

We all make mistakes, and we all have idiosyncrasies. Some men think it advisable to pose as pessimists concerning their own ability or accomplishments. They do not really desire people to rate them as they publicly rate themselves. We frequently see this pose in discussions, and sometimes among our patients, who are always running themselves down. They do not believe it themselves, and they really do not want any one else to believe it; often they are persons of ability.

Only a small number of patients under treatment by any one physician die, and only a small proportion of those that die come to autopsy. If Dr. Cabot's findings were statistically correct, the majority of our patients would recover in spite of mistaken diagnosis and treatment. Although there is no doubt that many of our patients recover in spite of diagnosis and treatment, those of us who are older and have more or less consulting or difficult office practice (receiving only "tough" cases) know that we would not succeed if we did not generally make correct diagnoses. Therefore I agree with Dr. Croftan that Cabot's article is ill-timed, ill-judged, and, being made public, unjust to his brethren in the profession. Such a talk as his should be given only to a small group of men in a confidential, personal discussion. [Dr. Cabot's paper was read and discussed before the Section on Practice of Medicine of the American Medical Association, and its publication approved.—Ed.]

Dr. Cabot entirely overlooks the fact that many diagnoses are made by exclusion, and that finally the case is rounded up to one, or one of two, or one of three causes. In such instances only an exploratory incision or a post-mortem examination could make the diagnosis positive. Such a decision is not a failure in diagnosis; it simply recognizes that difficulties are presented to us which science has not yet given sufficient diagnostic data to solve. But this is no failure on the part of the diagnostician, and the treatment of the patient is often the same, whichever diagnosis is chosen of the two or three possibilities reached by careful exclusion. In other words, the patient and not the name of the disease is to be treated. On the other hand, there are thousands of correct diagnoses made of patients who have no organic disease, and who, on account of the correct diagnosis, receive correct treatment and entirely recover. In other words, Dr. Cabot's paper is a sad proposition to present to laymen, but medicinally, and as far as the welfare of our patients is concerned, it means very little.

Oliver T. Osborne, M.D., New Haven, Conn.

To the Editor:—I have read with much interest, but many doubts, the criticism by Dr. Alfred C. Croftan in The Journal, January 11, on the recent article by Dr. Richard C. Cabot, "Diagnostic Pitfalls." I am a great admirer of Dr. Cabot's unequivocal honesty and sterling integrity.

One must confess that professional honesty can be graded, the same as commercial products or even California fruit, and this superfine Cabot grade, which would proclaim the truth from the housetops because it is truth, no matter what the personal cost or sacrifice might be, is certainly a *rara avis*. Only twice have I met it before: once in a great medical teacher who no longer resides in this country, and again in a prominent surgeon with whom this teacher was long associated.

Dr. Croftan's statement that in Vienna he has "seen 152 consecutive cases correctly diagnosed in every clinical detail" will be hardly accepted by any surgeon who has had experience in operating after diagnoses made by internists. I have found the lily painted as frequently abroad and even in brighter colors than in my own country.

The Cabot grade can best be shown by contrast with one of Dr. Croftan's own statements. "The whole argument is illog-

ical," he says; "fifty men are not necessarily a centipede because one man is a biped." This is trite, it is apropos; its brilliancy smacks of good sound literature. But the Cabot grade would have enclosed this centipede biped wit in quotation marks, for the expression is not Dr. Croftan's. It belongs to the English essayist, Gilbert K. Chesterton ("What's Wrong with the World," p. 2).

RAYMOND RUSS, M.D., San Francisco.

Work of the Full-Time Instructor

To the Editor:—When a standard is established in food or drug analysis, a method of approximation to the standard is also established. Thus, if a sanitary authority fixes a limit of 25 parts per million for sulphur dioxid in gelatin, it also sets forth in detail the process by which the ingredient is to be determined.

I make this prologue because I wish to call attention to the fact that while severe standards are now being required for medical colleges, no definite methods of ascertaining compliance therewith are being furnished, nor, as it seems to me, are some of the standards clearly defined.

Take, for example, the "full-time" instructors. What constitutes full time? Surely, it is not meant that the instructor is to spend all his, or her, waking hours in the teaching work. It is thought by many that research work should be performed by such teachers in the hours not actually occupied with students; but research work is not teaching, and students may not get direct benefit from the time that the instructor spends in the research laboratory. It is likely that many instructors will find research more attractive than the lecture-room, as to both immediate and prospective returns in fame and fortune, so that the student will be neglected. Will full-time registry prevent the teacher from preparing text-books or contributing within or without his specialty to journals and encyclopedias, or serving without compensation on commissions of inquiry under national, state or municipal authority, along lines of his teaching work? Some years ago I was a member of a milk commission. The service was without compensation. The report has been pronounced one of the most important yet rendered in the matter, and the information that I obtained in the course of service on the commission was of much value to my students in the department of hygiene. The service was carried on without loss of an hour from the prescribed schedule of my work at the college. Would such a service interfere with full-time registry? What about vacation work? Medical schools in this country are not usually in session between the middle of June and the middle of September. Suppose a teacher should take up some work for compensation during this period, would the "full-time" condition be broken?

From conversations with teachers in medical schools, I have learned that some consider that the full-time requirement means that no time shall be given to routine medical practice, but that teaching in two institutions or accepting expert duty does not conflict. I have not so understood the condition, but it may be worth while for those who are promoting the system to inquire how far the several institutions are complying with the requirements. The history of reform in American medical education shows too many instances of colleges deliberately keeping the word of promise to the ear and breaking it to the hope to permit us to suppose that in this serious matter they will all be true without supervision.

HENRY LEFFMANN, M.D., Philadelphia.

[COMMENT.—The term "full-time instructors" as applied to medical colleges means exactly the same as if applied to a scientific school or a college of liberal arts. No one thinks of arguing that a teacher in our standard colleges of liberal arts should be permitted to engage in private business in all except the strictly class-room hours. So for medical colleges the object sought by the requirement is to secure teachers who are paid sufficient salaries so that their life-work and their chief interests may be devoted to the training of medical students. The teaching of modern medicine, particularly in the laboratory branches, can no longer be satisfactorily done by busy practitioners or by others who can devote only fragments of their time to teaching, and who are required to look to other unrelated lines of work for their livelihood. As to research in the medical school, the expert teacher must of necessity be engaged in research if he is to keep up with the rapid developments of his subject and if he is to bring into the medical college the spirit of investigation with which every medical student should become imbued. If the teacher by his own research is fully up to date in his subject and has something worth while to add to the world's knowledge of that subject it would by no means detract from his usefulness as a teacher for him to use his spare moments in reporting such facts, or in writing a book on that subject. Unless he is an authority in his subject he would scarcely be in position to write a text-book. Again, expert duty along the lines of the subject taught might really add to an instructor's teaching ability. Vacation time also is the instructor's, to be used as he may see fit. No outside work, however, should be allowed to interfere with his first work as a medical teacher. The "full-time" teacher is one whose work *is in the college;* his private library is there; his research work is there; his interests are there; he can be readily found by the students to whom his work is a constant inspiration. Instead of the empty, lifeless laboratory of former times headed by the busy practitioner, the full-time teacher's laboratory is an active, orderly place—a constant and present example to those who are fortunate enough to become his pupils.—EDITOR.]

The Special Package Evil

To the Editor:—There is much food for thought in the editorial from the New York *Sun* (THE JOURNAL A. M. A., Oct. 5, 1912, p. 1307) warning the public against physicians who prescribe proprietaries, blaming these physicians for the all-too-prevalent tendency of the public toward self-medication, and lauding the old-fashioned prescription because it at least cannot easily be duplicated.

It is but too true that the prescribing of proprietaries fosters self-drugging. When a patient learns that the medicine prescribed is "ready-made" he shrewdly concludes that it was not made for his ailment in particular, but that it must fit a series of similar conditions. Hence, if it is found of value, he will hereafter use it for all symptoms similar to those which caused his physician to prescribe the proprietary. He also will find little difficulty in finding symptoms in the ailments of his friends which will warrant a recommendation to patronize his remedy.

But there is another objection to the prescribing of ready-to-take proprietaries. Even if the preparation is the best possible medicine that could be selected for the particular case, the very fact that it was ready-made is bound to lessen the patient's confidence in his physician—about as much as one would lose faith in a tailor caught in palming off a ready-made suit.

While the patient has a right to know what medicines he is taking, it is desirable for the reasons just given that physicians take pains to give their prescriptions a character of individuality, and to avoid whenever possible giving the appearance of prescribing ready-made medicines.

Physicians who would follow this advice should bear in mind that almost every proprietary article is put up in a distinctive package, and also that the druggist is most likely to dispense it in this package. As a result it is more than likely that the patient will find it out if a proprietary is prescribed, no matter whether it is Fellows' Syrup with the name blown in the glass or the very ethical and probably valuable atophan with its neat little "star-bespangled" box, even if the physician takes pains to write special directions and the druggist removes the printed label and affixes his own. And it must be understood that the druggist has good reasons for dispensing the proprietary in its original container. In the first place, many physicians have acted on the manufacturer's assertion that druggists are prone to substitute, and therefore tell their patients the kind of con-

tainer in which their medicine should come, thus making it suicidal for the druggist to transfer the proprietary to a regular prescription box or bottle. The second reason is that the druggist must often use the peculiar style of container as a warrant for the high price that he must charge, for almost every proprietary is more expensive than 99 per cent. of the ordinary prescriptions of physicians.

It would be most instructive and also decidedly advantageous if physicians would make it an invariable rule to ascertain the style in which a proprietary remedy whose employment they contemplate is put up. They will then see what steps they must take in order that a prescription for such a proprietary remedy may not be the cause of its indiscriminate use, or subject them to the criticism of prescribing ready-made medicines.

W. C. WESCOTT, PH.G., M.D., Atlantic City, N. J.

Disinfection of Schoolrooms

To the Editor:—In your issue of Dec. 14, 1912, p. 2171, is a miscellaneous item dealing with a paper on the above subject read by me at the Fifteenth International Congress on Hygiene and Demography. The item in question, after outlining the suggestions contained in my paper, concludes: "THE JOURNAL is disposed to wonder as to the reception which would be given to this mode of disinfection. The continuous odor of phenol throughout the school building, which would perhaps be even carried home in the scholars' clothing, might arouse protest which would interfere with the carrying out of the plan."

May I respectfully point out that you have misunderstood my meaning in this connection? The paragraph in my paper to which the above quotation relates reads as follows:

> "To avoid the objectionable odor inseparable from the use of certain disinfectants of low efficiency (necessitating proportionately low dilutions), I would advocate the use of one of the modern high-testing disinfectants in a dilution equivalent to 1 part pure carbolic acid (phenol) in 25 parts of water—say one with a Rideal-Walker coefficient of 20, the dilution of which, equivalent to 1:25 carbolic acid would be 1:500. Taking the cost of such a preparation at $1.50 per gallon, a superficial area of 10,000 square feet could be disinfected daily for a week at a cost of approximately 40 cents."

I do not, as suggested in your note, recommend the spraying of schoolrooms with a 1:25 phenol solution. Such a course would be impracticable not only on the ground mentioned in THE JOURNAL, but also on that of expense. With the use of a preparation such as I have indicated, on the other hand, neither of these disabilities applies, as may be gathered from the fact that practical experiments in schoolroom disinfection with a bactericide of this nature are at present being officially carried out by the education authorities of New York, Boston, Philadelphia, Pittsburgh, Toledo and other cities.

In view of the weight attaching to any pronouncement in THE JOURNAL, I trust that you may be able to find space for the publication of this letter as the most effective means at my disposal of correcting a misconception which must constitute a serious obstacle to a much-needed reform.

J. T. AINSLIE WALKER, New York.

What Vital Statistics Should Be.—Vital statistics are, in short, not vital; they deal with death, not life, with the "finished product" only of our slack, slipshod methods. They ought to deal, not with the dead, but who they were, and why and how they died, and why they were not saved. Suppose the factory manager merely knew at the end of the year his total product! Suppose that even this piece of information related, not to the way business went last year, but to the way it went five years before! The modern scientific manager must know not just the total product, he must know also all about the product, the kind, the quality, the cost, and why it is not better for the price. The modern vital statistician must know not only the deaths, but why the health department is not stopping them; what its funds are; how they are spent or wasted; what work is being done; how much of value each division does; and all to one end of saving life.—Hill in *Journal-Lancet.*

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PROPORTION OF PHYSICIANS TO POPULATION

To the Editor:—Please give the latest figures showing the proportion of physicians to population in the various states.

WILLIAM Z. DAHL, M.D., Eagle, Colo.

ANSWER.—The following table is based on the population figures of the Census of 1910 and the number of physicians shown by the third edition of the American Medical Directory.

State	Population	Physicians	People to Each Physician
Alabama	2,138,093	2,418	884
Arizona	204,354	247	868
Arkansas	1,574,449	2,596	606
California	2,377,549	4,767	499
Colorado	799,024	1,772	451
Connecticut	1,114,756	1,564	713
Delaware	202,322	246	822
District of Columbia	331,069	1,350	245
Florida	752,619	974	773
Georgia	2,609,121	3,022	863
Idaho	325,594	420	775
Illinois	5,638,591	9,988	565
Indiana	2,700,876	4,984	542
Iowa	2,224,771	3,653	609
Kansas	1,690,949	2,688	625
Kentucky	2,289,905	3,601	636
Louisiana	1,656,388	1,930	858
Maine	742,371	1,176	631
Maryland	1,295,346	1,972	657
Massachusetts	3,366,416	5,648	593
Michigan	2,810,173	4,104	685
Minnesota	2,075,708	2,262	918
Mississippi	1,797,114	6,032	298
Missouri	3,293,335	6,037	546
Montana	376,053	512	734
Nebraska	1,192,214	1,796	664
Nevada	81,875	144	569
New Hampshire	430,572	704	612
New Jersey	2,537,167	2,884	880
New Mexico	327,301	430	761
New York	9,113,614	14,815	615
North Carolina	2,206,287	1,849	1,193
North Dakota	577,056	594	973
Ohio	4,767,121	7,513	635
Oklahoma	1,657,155	2,620	633
Oregon	672,765	1,041	646
Pennsylvania	7,665,111	11,345	676
Rhode Island	542,610	751	723
South Carolina	1,515,400	1,275	1,189
South Dakota	583,888	651	897
Tennessee	2,184,789	3,338	655
Texas	3,896,542	5,888	662
Utah	373,351	427	874
Vermont	355,956	679	524
Virginia	2,061,612	2,359	874
Washington	1,141,990	1,630	701
West Virginia	1,221,119	1,639	745
Wisconsin	2,333,860	2,652	880
Wyoming	145,965	235	621
Army, Navy, P. H. S.	.....	968	...
Total	91,972,266	142,190	640

LITERATURE ON THE PREVENTION OF INFANT MORTALITY

To the Editor:—Please refer me to literature on the study of the prevention of infant mortality. We are planning to have a children's welfare conference here, and want to use the literature in regard to the work. MARY W. MILLER, Harrisburg, Pa.

ANSWER.—The following may be referred to:

Herrman, Charles: Suggestions for Reducing the Infant Mortality from Summer Diarrhea, *Arch. Pediat.*, July, 1907.

The Conservation of Child Life in Pennsylvania, *Bull. Pennsylvania State Board of Health*, August, 1910.

Hoffman, H. H.: Saving the Babies, *Harper's Weekly*, Sept. 30, 1911.

Infant Mortality, *Bull. New York City Board of Health*, April, 1912.

Infant Mortality and Infant Vitality, *Bull. New York State Board of Health*, May, 1912.

Neff, J. S.: Efficiency in Child Saving, *Ann. Am. Acad. of Political and Social Sc.*, 1912, xii, 69.

Infant Mortality and Its Relation to the Employment of Mothers, Volume 13 of the Report of Conditions of Woman and Child Wage-Earners in the United States, Senate, 61st Congress, 2d Session, Document 645, Washington, Government Printing Office, 1912.

American Association for Study and Prevention of Infant Mortality, Transactions, 1910, 1911, 1912; Secretary, Dr. Frank S. Churchill, 1259 North State Street, Chicago.

Newmayer, S. W.: Warfare Against Infant Mortality, *Ann. Am. Acad. Political and Social Sc.*, xxxvii, 288.

Infant Mortality and Milk Stations, Report of the New York Milk Committee, 105 East 22d Street, New York City.

The Department of Child Hygiene of the Russell Sage Foundation, 400 Metropolitan Tower, New York City, has literature on the subject.

CAUSE OF INITIAL CHILL AND ACUTE CONGESTION IN PNEUMONIA

To the Editor:—How soon after the initial chill does infection with the pneumococcus take place? If only after exudation, what is the cause of the chill and acute congestion in lobar pneumonia? It is stated that exudation takes place in about twenty-four hours. What would be the best means to prevent infection of the congested lung? I have had cases that appeared to be pneumonia, but which never went further than the stage of congestion, infection evidently not taking place. These are perhaps only cases of acute congestion of the lung. It seems that it would be a good thing if they could all be stopped there. I do not think that the books I have are entirely clear as to the cause of the initial chill and acute congestion if infection does not take place until exudation occurs. M. T. CLARK, M.D., Temple, Okla.

ANSWER.—It is usually believed that the chill and accompanying fever are due to the entrance into the blood of the toxins of the disease, and, in the opinion of some pathologists, pneumococci are present in the blood at the same time. If this view is correct, the infection must have occurred previous to the chill. As the pneumococcus is found frequently in the mouth and throat of normal persons and is present in the bronchial secretions in cases of bronchitis, it is evident that infection in the sense of the beginning of pneumonia must be due to a change in the virulence of these organisms and the invasion of tissues which are not affected in the other conditions due to the pneumococcus. It is quite possible that further studies on immunity in pneumonia may result in discovering a means of aborting the disease in the congestive stage, but so far we know of none. The occurrence of pneumonia of one or two days' duration has been observed in a few cases, and it is easy to see how such cases give rise to the view that some remedy has aborted the pneumonia. It is probable that a considerable number of cases go no further than the congestive stage, and are regarded by enthusiastic observers as having been aborted by their favored remedies.

EXPERIMENTAL PNEUMONIA

To the Editor:—1. Will rabbits injected with a fatal dose of virulent pneumococci die of pneumonia or a septicemia? 2. Is it possible to produce a simple pneumonia in rabbits, and how? 3. Are guinea-pigs susceptible to the pneumococci and to pneumonia? 4. Please refer me to books and articles covering experimentation in pneumonia in the lower animals.

T. J. WEST, M.D., Makaweli, Kauai, T. H.

ANSWER.—1. Rabbits injected hypodermatically with virulent cultures of pneumococci usually develop a septicemia without a definite pneumonia comparable to the lobar pneumonia of man.

2. By very careful graduation of the dose of pneumococci injected, it has been possible to cause the development of a lobar pneumonia in rabbits. The pneumococci used in these experiments have, as a rule, been injected into the trachea or bronchi.

3. Yes.

4. The following may be referred to:

Riesman, D., and Kolmer, J. A.: Studies in Experimental Pneumonia, *Tr. Assn. Am. Phys.*, 1912.

Wadsworth, A. B.: Pneumococcus Infections in Animals, *Jour. Exper. Med.*, July, 1912.

Lauman, R. V., and Meltzer, J.: Experimental Pneumococcus by Intrabronchial Insufflation, *Jour. Exper. Med.*, February, 1912.

Truche, Cramer and Cotoni: Virulence of the Human Pneumococcus for the Mouse, *Ann. de l'Institut Pasteur*, June, 1911.

Friedlander: Versuchungen über die Infection des Meerschweinchens, *Centralbl. f. Bakteriol.*, 1911, lix, 103.

Rasquin, E.: Etude expérimentale sur la pathogénèse de la pneumonie chez le lapin, *Arch. de méd. expér. et d'anat. path.*, 1910, xxii, 804.

Stroud, S.: Experimental Studies of Pneumococcus Infections, *Jour. Exper. Med.*, September, 1909.

Wadsworth, A.: Experimental Studies on the Etiology of Acute Pneumonitis, *Am. Jour. Med. Sc.*, 1904, cxxvii, 851.

Prudden, T. M.: A Study of Experimental Pneumonitis in the Rabbit Induced by the Intratracheal Injection of Dead Tubercle Bacilli, *New York Med. Jour.*, 1891, liv, 617.

FLIES WHICH DEPOSIT EGGS WHEN THEY STING

To the Editor:—Can you give me information regarding a parasite found in Cuba, Jamaica, Honduras and other tropical countries, known as the dust or skin gnat-fly? These flies burrow into the skin and by eggs; the larvae appear in successive crops. Any information regarding the treatment will be appreciated. M. M. H.

ANSWER.—The description given, without a specimen, does not enable us to identify the insect; we do not find the names given by our correspondent as synonyms of any names known to us. The parasite referred to is possibly the burrowing flea, *Sarcopsylla penetrans*, or one of the flies, the *Dermatobia noxialis* or the *Chrysomyia macellaria*. The latter is known also as *Lucilia* or *Compsomyia macellaria*, commonly called the screw-worm fly. *Dermatobia noxialis* is said to be especially troublesome in Panama, while *Chrysomyia macellaria* has a wide range of distribution in North and South America. The female fly of *Chrysomyia* deposits her eggs in the tissues of the host. The larvae develop from the ova with surprising rapidity, in some cases the moving maggots being seen in the skin within a few moments after the sting is discovered. The larvae in the tissue produce a violent inflammatory reaction with great collateral edema, so that from a sting on the lip the edema may spread to the point of obstructing respiration and deglutition. Unless the larvae are removed, suppuration and necrosis occur. *Chrysomyia macellaria* is an important pest of domestic animals, but does not frequently attack man. The lesions produced by it, unless properly treated by the injection of chloroform and extraction of the larvae, are occasionally fatal. A description of *Dermatobia noxialis* and the lesion caused by it may be found in the article of Dr. J. Lee Adams, Jr., "Tropical Cutaneous Myiasis in Man," THE JOURNAL, April 3, 1904, p. 947. Another fly the larvae of which burrow into the skin is *Ochromyia anthropophaga*, found only in Africa. A general bibliography of myiasis in man may be found in an article by N. C. Gilbert, "Infection of Man by Dipterous Larvae," *Archives of Internal Medicine*, October, 1908, p. 226.

If our correspondent can obtain specimens of the insect in question and will send them to the Bureau of Entomology at Washington, he will doubtless obtain information in regard to its scientific name, etc.

EFFICIENCY OF COMMERCIAL BARIUM SULPHATE IN ROENTGENOGRAPHY

To the Editor:—I have some commercial barium sulphate which I wish to mix with water and milk or buttermilk to give to patients for *x*-ray work. I have used bismuth subcarbonate heretofore. Please tell me about the toxicity of commercial barium sulphate. Is it better to use the commercial or the pure salt? Are the bismuth salts considered better for *x*-ray work than the barium?

J. P. DEWITT, M.D., Canton, Ohio.

ANSWER.—We find nothing definite with reference to the use of commercial barium sulphate. There is danger that the barium sulphate might be contaminated with sulphid or possibly with carbonate, in which case it might enter into solution in the intestine and produce toxic symptoms. Dr. G. Schwarz reports (*Berl. klin. Wchnschr.*, July 22, 1912, p. 1424) two cases of substitution for barium sulphate, one of carbonate, the other of barium oxid. In the case in which barium carbonate was used, rather serious symptoms of poisoning occurred. In view of this danger, if barium sulphate is used it would be preferable to secure the chemically pure salt. The preparation could be easily tested for the barium sulphid or carbonate by warming with dilute hydrochloric acid, filtering and adding to the filtrate dilute sulphuric acid. If a precipitate should occur immediately, one would be justified in assuming the presence of a barium compound soluble in dilute acid. A more detailed method for the determination of the purity of barium sulphate is published in the *Apotheker-Zeitung*, No. 49, 1912, p. 465, contributed by the firm of E. Merck, Darmstadt. It is here recommended that only an absolutely pure barium sulphate prepared with a special reference to its use for roentgenography should be employed. The risk of poisoning would probably be greater with impure barium salts than with the bismuth compounds. Intoxication by absorption of bismuth from the intestinal canal seems to be rare. Probably the cases of poisoning by bismuth salts have been due to the decomposition of the nitrate, and are really cases of nitrous poisoning.

PUBLIC SERVICE CHANGES ARE STILL BEING PUBLISHED

To the Editor:—I have noticed the omission of the weekly report of army medical orders. These were of interest to many readers and often served as a directory of our medical friends in the service.

W. C. FISHER, M.D., New York City.

ANSWER.—If our correspondent will pardon us, we will correct his statement by saying that he cannot have noticed the *omission*—for there has been no omission—but that he has failed to note the *change of position* of the weekly reports of the medical officers of the Army, the Navy and the Public Health Service. Nearly a year ago, realizing that these lists of changes were purely ephemeral matter, they were transferred to the advertising pages immediately following the reading matter. In order to inform our readers concerning this change, an explanatory note appeared for several weeks at the bottom of the page where the changes in the public service had formerly been printed. The position of the Public Service department is indicated each week in the Digest of THE JOURNAL—the last item on the second page of the cover.

LITERATURE ON HOSPITAL CONSTRUCTION

To the Editor:—Through the efforts of the Waukesha City Medical Society and the women's clubs we have secured a fund of $15,000 for the erection of a municipal hospital, designed to accommodate both private and city cases. The hospital committee of the city council is now ready to consider plans and is looking to us to present plans and specifications with our endorsement. Can you give us any help? B. M. CAPLES, Waukesha, Wis.

ANSWER.—The following original articles have appeared in THE JOURNAL:

Haven, Alfred C.: The Lake Forest Hospital for Contagious Diseases, Jan. 17, 1912, p. 253.
Ochsner, A. J.: Practical Points of Economy in Hospital Construction, Sept. 21, 1907, p. 990.
Sturm, M. J.: Planning and Construction of Hospitals for Smaller Cities and Towns, Feb. 20, 1909, p. 610.
Thompson, W. G.: Modern Hospital Construction, Sept. 21, 1907, p. 993.
Holmes, Bayard: The Hospital Problem, Aug. 4, 1906, p. 318; A Suggestive Plan for a Modern General Metropolitan Hospital of Five Hundred Beds, March 28, 1908, p. 1025.

The following books may be found of assistance:

Modern Hospitals, published by the American Architect, 50 Union Square, New York. $5. (Reviewed in THE JOURNAL, Nov. 9, 1912, p. 1741.)
Biggs, Hermann M.: Comments on Some Plans of Hospital Construction, Dept. of Health, New York, Monograph Series 7, September, 1912. (Reviewed in THE JOURNAL, Nov. 9, 1912, p. 1741.)
Galton: Healthy Hospitals, Oxford University Press, 91 Fifth Ave., New York. $2.75.
Ochsner and Sturm: Organization, Construction and Management of Hospitals, Cleveland Press, Chicago. $7.

In addition, the following are articles which have appeared in various other periodicals:

Aikens, Charlotte A.: Some Common Blunders in Hospital Construction, *Nat. Hosp. Rec.*, 1907, x, 16.
Beilhach, P. H.: Natural Versus Mechanical Ventilation of Hospitals, *Mil. Surg.*, 1907, xx, 199.
Goldwater, S. S.: Cost of Modern Hospitals, *New York Med. Rec.*, Oct. 14, 1905.
Goodrich, Annie W.: Some Common Points of Weakness in Hospital Construction, *Am. Jour. Nursing*, 1903-4, iv, 93.
Hacker, A. B.: Notes on the Requirements of Modern Hospital Architecture, *St. Paul Med. Jour.*, February, 1904.
McMullen, B. H.: Small Hospitals for Small Places, *Jour. Michigan Med. Soc.*, July, 1908.
Ochsner, A. J.: Hospital Construction in American Cities and Towns, *Lancet-Clinic*, Nov. 12, 1904; Hospital Construction, *Illinois Med. Jour.*, October, 1908.
Simpson, W. J.: Infectious Hospitals, *Jour. State Med.*, London, 1903, xi, 521; Plans for a Model Modern Hospital, *Nat. Hosp. Rec.*, 1907, x, 10.
Smith, G. A.: Application of the Cottage System to the New Hospitals, *Mil. Surg.*, 1907, xx, 199.
Vander Veer, Albert: The Essentials of Modern Hospital Construction, *Albany Med. Ann.*, July, 1902.
Dunbar, A. W.: A Description of Recent Hospital Construction in the United States Navy, *U. S. Naval Med. Bull.*, October, 1912, p. 473.

LITERATURE ON INTRATRACHEAL INSUFFLATION

To the Editor:—Please refer me to literature on intratracheal insufflation. J. J. FABIAN, M.D., Grand Rapids, Mich.

ANSWER.—The following may be referred to:

Landon, L. H.: Practicability of the Meltzer-Auer Method of Continuous Intratracheal Insufflation, *Univ. Penn. Med. Bull.*, July-August, 1910.
Lilienthal, H.: First Case of Thoracotomy in a Human Being: Anesthesia by Intratracheal Insufflation, *Ann. Surg.*, July, 1910.
Elsberg, C. A.: Intratracheal Insufflation (Meltzer): Its Value in Thoracic Surgery, *Ann. Surg.*, July 1910; Anesthesia by the Intratracheal Insufflation of Air and Ether, *Ann. Surg.*, February, 1911.
Meltzer, S. J.: Intratracheal Insufflation, THE JOURNAL, Aug. 12, 1911, p. 521.
Quimby, W. C.: Intratracheal Insufflation as Anesthetic Method, *Boston Med. and Surg. Jour.*, October, 1911.
Auer, J., and Meltzer, S. J.: Status of Respiration in Methods of Differential Pressure Compared with That Under Method of Intratracheal Insufflation, *Jour. Exper. Med.*, December, 1911.
Woolsey, W. C.: Intratracheal Insufflation Anesthesia, *New York State Jour. Med.*, April, 1912.
Elsberg, C. A.: Intratracheal Insufflation Anesthesia, *New York State Jour. Med.*, September, 1912.
Leighton, W. E.: Anesthesia by Intratracheal Insufflation of Air and Ether, *Jour. Mississippi Med. Assn.*, September, 1912.
Boothby, W. M.: Intratracheal Insufflation Anesthesia, *Ann. Surg.*, January, 1913.

TESTS FOR THE IDENTIFICATION OF HUMAN BLOOD

To the Editor:—Please give me references to tests for the positive identification of human blood. S. M. L.

ANSWER.—These tests are given in works on medical jurisprudence. We refer you especially to Peterson and Haines' "Legal Medicine and Toxicology," 1904, ii, 722, and Whitthaus and Becker's "Medical Jurisprudence, Forensic Medicine and Toxicology," 1909, iii, 809.

LITERATURE ON RESUSCITATION FROM DROWNING

To the Editor:—Please refer me to literature on the various methods of resuscitation of the apparently drowned, dealing especially with the early history of the subject and with the methods employed within the last five or ten years at the various life-saving stations throughout the United States. R. J. C.

ANSWER.—As a rule, in compiling references in answer to inquiries, we do not search the literature for the history of the subject. The following articles in recent literature may be referred to:

Resuscitation from Drowning, THE JOURNAL, Aug. 20, 1908, p. 779.
Schäfer, E. A.: Artificial Respiration in Apparent Death from Drowning, *Berl. klin. Wchnschr.*, March 29, 1909.
Kuhn, F.: Resuscitation by Artificial Ventilation of the Air-Passages, *München. med. Wchnschr.*, Sept. 13, 1910; abstr. in THE JOURNAL, Oct. 22, 1910, p. 1510.
Frazier, C. H.: Resuscitation by Cardiac Massage, THE JOURNAL, May 20, 1911, p. 1448.
Asphyxia from Submersion: Drowning, THE JOURNAL, Sept. 30, 1911, p. 1132.
Death by Drowning, THE JOURNAL, Aug. 26, 1911, p. 744.
Resuscitation, *Bull. Pennsylvania State Board of Health*, No. 35, May, 1912.
Hitchings, F. W.: Resuscitation from Drowning, THE JOURNAL, Nov. 23, 1912, p. 1873.
Lewin, L.: Apparatus for Resuscitation of the Apparently Drowned or Asphyxiated, *München. med. Wchnschr.*, Nov. 19, 1912.

SUBSTITUTE FOR COFFEE WANTED

To the Editor:—Can you give me a formula for a good substitute for coffee—something that will give the warmth and nutrition and please the taste reasonably well and will be cheaper in price but will give none of the bad effects of coffee? I suppose some of the commercial articles serve reasonably well, but their prices are entirely above a reasonable first cost, and, besides, I should like to know what I am prescribing. I am sure that you will agree with me that a good substitute for tea and coffee would be of great benefit to our race, and this is a matter for the profoundest attention of the medical profession. JOHN W. GIVENS, M.D., Orofino, Idaho.

ANSWER.—Roasted barley is used and so is chicory, which latter we discussed in an editorial, Nov. 9, 1912, p. 1722. Perhaps some of our readers can suggest other substitutes they have found acceptable.

THERAPEUTIC EFFECTS OF SODIUM HYPOSULPHITE

To the Editor:—Please give me the therapeutic effects of hyposulphite of soda, especially as to its laxative and purgative effects. L. T. L.

ANSWER.—Sodium thiosulphate ("hyposulphite") resembles sodium sulphite. The following is the statement of their properties by Cushny: "Solutions of these salts have been used to a limited extent as antiseptic mouth-washes in aphthae, and have been prescribed in some forms of fermentation in the stomach. They were formerly reputed to be of benefit in cases of pyemia from their supposed action as antiseptics in the blood, but have never been shown to be of any real value." We find nothing stated as to laxative properties, but think it would be inadvisable to use these salts for that purpose.

COMBINED OFFICE AND RESIDENCE FOR PHYSICIAN

To the Editor:—Have you a collection of sketches of plans for physicians' houses, combining house and office? If not, please give me references to a few. F. P. MCCARTHY, M.D., Erie, Pa.

ANSWER.—We have no collection of such plans, but have printed several within the last year (as listed below)—and we are willing to print more.

Simpson, Jesse P.: Combined Office and Residence, THE JOURNAL, Feb. 10, 1912, p. 431.
York, N. Albert: Combined Office and Residence, THE JOURNAL, March 9, 1912, p. 728.
Bales, C. W.: Combined Office and Residence, THE JOURNAL, March 30, 1912, p. 957.
Jorgensen, P. P. M.: Garage Built Into Rear of House, THE JOURNAL, April 6, 1912, p. 1055.
Chamberlain, A. R.: Another Type of Combined Office and Residence, THE JOURNAL, May 4, 1912, p. 1394.

COMPATIBILITY OF ASPIRIN AND POTASSIUM CITRATE—VACCINE TREATMENT OF ACNE

To the Editor:—1. Is aspirin—acetylsalicylic acid—compatible with potassium citrate? If so, would it not be a good way to administer aspirin in potassium citrate in rheumatic conditions? 2. Is the vaccine or bacterin treatment of acne proving satisfactory? E. I. WHITEHEAD, M.D., Stella, Neb.

ANSWER.—1. Yes.

2. The reports given seem to be favorable in certain cases.

ANATOMIC DIFFERENCES BETWEEN INFANTS AND ADULTS

To the Editor:—Please refer me to literature on anatomic differences between infants and adults. H. H. M.

ANSWER.—The following may be referred to:

Cotton: Anatomy, Physiology and Hygiene of Childhood, Chicago Med. Book Co.; price $1.50.

Levison, L. A., and Dachtler, H.: The Essential Differences Between the Physical Findings in Childhood and Adult Life, THE JOURNAL A. M. A., Sept. 17, 1910, p. 1008.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

KANSAS: National Hotel, Topeka, February 11. Sec., Dr. H. A. Dykes, Lebanon.

MISSOURI: St. Louis, February 24-26. Sec., Dr. Frank B. Hiller, State House, Jefferson City.

NEBRASKA: Lincoln, February 12-13. Sec., Dr. C. P. Fall, Beatrice.

ANNUAL CONFERENCE ON MEDICAL EDUCATION, LEGISLATION AND PUBLIC HEALTH

The annual Conference on Medical Education and Legislation under the auspices of the Council on Medical Education and the Council on Health and Public Instruction will be held at the Congress Hotel, Chicago, Monday and Tuesday, Feb. 24 and 25, 1913.

On Monday, February 24, the Council on Medical Education will hold its ninth annual conference, the session to begin at 9 a. m. Besides remarks from the chairman, Dr. Arthur D. Bevan, and the report by the secretary, Dr. N. P. Colwell, the program will consist of the following addresses:

"Hospitals and Their Relationship to Clinical and Postgraduate Medical Teaching." Dr. Horace D. Arnold, dean of the Harvard University Graduate School of Medicine, Boston.

"The European Side of Medical Education." Mr. Abraham Flexner of the General Education Board, New York City.

"Necessity of a Readjustment of Preliminary and Collegiate Education." President Harry Pratt Judson, University of Chicago.

"Organization of the Medical School." Dr. Edward H. Bradford, dean of the Harvard Medical School, Boston.

"The Importance of Harmony and Uniformity of the State Licensing Boards." Dr. Herbert Harlan, president of the Maryland State Board of Medical Examiners, Baltimore.

"The Medical Profession and the Public." Dr. George H. Simmons, editor of THE JOURNAL of the American Medical Association, Chicago.

"The Medical Profession and Medical Education." Dr. J. A. Witherspoon, president-elect of the American Medical Association and professor of medicine, Vanderbilt University Medical Department, Nashville, Tenn.

The annual Conference on Medical Legislation will be held Tuesday, February 25. Besides the address by the chairman, Dr. H. B. Favill of Chicago, the reports of committees and the following addresses will be given:

"Medical School Supervision." Dr. E. B. Hoag, St. Paul.

"State Police Power and the Practice of Medicine." Mr. A. C. Umbreit, attorney for the Wisconsin State Board of Medical Examiners.

"Control of Ophthalmia Neonatorum in Massachusetts." Dr. Mark W. Richardson, secretary of the State Board of Health, Boston.

"Municipal Regulation of the Milk-Supply." Prof. E. O. Jordan, Chicago.

"Antivivisection Agitation and the Forces Behind It." Dr. W. B. Cannon, Boston.

"Progress in Vital Statistics Legislation in the United States." Dr. Cressy L. Wilbur, Washington, D. C.

"Forty-Three Years of Medical Legislation; Criticism and a Program." Dr. Frederick R. Green, Chicago.

ANNUAL MEETING OF FEDERATION OF STATE LICENSING BOARDS

The Federation of State Licensing Boards will hold its annual meeting at the Congress Hotel, Chicago, Tuesday, Feb. 25, 1913. Papers on the following subjects will be presented:

"Is Universal Reciprocity to Be Desired?"

"Should Medical Boards Require One or More Years of College Work Preliminary to the Study of Medicine?"

"Should One or More Years in a Hospital Be Required for Admission to the Examination for Medical Licensure?"

"Rules and Regulations Governing Examinations for Medical Licensure."

"Qualification of Examiners."

"What Fee Should Be Required for the Examination?"

"Means of Keeping Politics Out of State Board Affairs."

These topics are of practical and vital interest to medical colleges, medical examining boards, the profession at large and the public.

ANNUAL MEETING OF ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The twenty-third annual meeting will be held at the Congress Hotel, Chicago, Feb. 26, 1913. The program consists of reports of committees on pedagogics, equipment, research and medical education, and the following papers:

"Some Problems of Medical Education," Dr. Egbert Le Fevre, New York.

"The Divided School," Dr. C. R. Bardeen, Madison, Wis.

"The Business Management of the Medical School," Dr. W. C. Borden, Washington, D. C.

The Committee on Medical Education will recommend advancing the entrance requirements to one year of college work in physics, chemistry, animal biology and one modern language. The discussion on these papers is open to all those who are interested in medical education.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

PROPOSED LEGISLATION ON PUBLIC HEALTH

Since the last summary appeared in THE JOURNAL, information received from various sources shows that bills have been introduced in many of the state legislatures on subjects relating to public health. A summary of these bills follows:

ARKANSAS

The most important health bill introduced in the Arkansas legislature is Senate Bill 30, introduced by Senator Hughes. This is entitled "An act for the proper protection of the public health and for other purposes." It is intended to take the place of the law creating the state board of health which passed the legislation at its last session, but which failed to become effective owing to the mysterious disappearance of the text of the law after its passage. Section 1 provides for the appointment by the governor of a state board of seven persons, one from each congressional district, each member to be a graduate of a reputable medical college, with at least seven years' experience and of good professional standing. Sections 2 to 6 contain the usual provisions for appointment, meetings and powers of the board. Sections 7 to 13 provide for a bureau and registrar of vital statistics. Sections 14 to 20 provide for a local board of health in cities of the first and second class. Section 21 provides for a hygienic laboratory which shall have charge of the enforcement of the pure food law and for other purposes. This laboratory is to be maintained in connection with the medical department of the University of Arkansas. Sections 22 to 31 provide for expenses, reports, employees' salaries, violations of the law, etc. The bill seems to be a comprehensive one, which if passed would greatly advance public health matters in the state.

CALIFORNIA

Bills have been introduced to provide for an appropriation of $100,000 for four state hospitals for tuberculosis; for a physical examination as a prerequisite to a marriage license; for the sterilization of idiots, the insane, habitual drunkards,

paralytics and confirmed criminals; for the prevention of marriages between first cousins, and for the increase of the age of consent from 16 to 18 years. The usual antivaccination law has been introduced to prohibit any public or private school from preventing any child from attending on account of its not being vaccinated. The board of health has asked for laws requiring the certification of hospitals, giving the state board supervision over the pollution of salt water as well as over the water-supplies for cities and for a law regulating cold storage.

COLORADO

Colorado has up to date supplied the prize freak law for 1913. It is in the form of an amendment to a new medical practice act, introduced by Dr. E. E. Kennedy, a member of the house of representatives. The amendment provides that surgeons operating for appendicitis are to submit the appendix for examination following the operation. In case the appendix proves to be normal, the physician is to be deprived of any fee for the operation and is to be liable to fine and imprisonment. The decision as to the normal condition of the appendix is to be made by a committee of three physicians to be named by the patient or by his relatives. The usual rash statements to the effect that "90 per cent. of all operations for appendicitis are unnecessary," etc., have appeared in the local newspapers in connection with this bill.

INDIANA

The state board of health has asked for the passage of bills to require proof of physical fitness as to condition for marriage license; to provide free antitoxin for those unable to pay for it; to create the office of state sanitary engineer and placing the health commissioners of the various counties under the supervision of the state board of health; to prohibit the sale of morphin, cocain and other habit-forming drugs and to provide for the medical supervision of the health of school children.

IOWA

The state board of health is preparing a bill to extend the duties of its district members and to provide an adequate appropriation for the work of the state board. The present appropriation ($5,000) is one of the smallest made by any state, and the board intends to ask for $35,000 for the coming year.

KANSAS

A bill providing for the registration of trained nurses will be introduced at the request of the Kansas state association of nurses. Another bill provides for the appointment of county health physicians from a list of three competent resident physicians in any county, nominated by the county medical society, and requires attendance at at least one session of the school for public health officers at the University of Kansas after Jan. 1, 1915. A bill has also been introduced to require the reporting of all communicable diseases and specifying twenty-seven diseases as coming under this head. The most important and dangerous bill which has yet been introduced, however, is House Bill 76, said to be prepared in the interest of one of the largest packing firms in Omaha. This bill provides that the state board of health shall be reorganized by the appointment of four business men, four physicians and one attorney. The object of the bill is to secure a majority of men on the board who can be influenced by commercial interests. Undoubtedly one object is to secure the removal of Dr. S. J. Crumbine, the present effective secretary, whose work in the prosecution of violators of the food laws of the state is well known. House Bill 75 provides for a board of chiropractic examiners. Two bills have been introduced in the house to amend the vital statistics law. Another bill provides compensation for medical health officers.

MISSOURI

A bill providing for the inspection of all hospitals, reformatories and public institutions has been introduced in the house.

NEBRASKA

A commission to revise the Nebraska code has drafted a bill giving vitality to the constitutional amendment creating a board of control for the several state institutions. The bill provides that the board of control shall have supervision over the deaf, blind, feeble-minded, drunkards, insane, inmates of penitentiaries and schools of correction, tuberculosis hospitals and all other state charitable, reformatory and penal institutions.

NEW HAMPSHIRE

House Bill 124, introduced by Mr. Wilkins, is to regulate the practice of suggestive therapeutics. It provides that any person over 21 who is a graduate from a regularly chartered school and who is of good moral character shall be allowed to practice suggestive therapeutics, and to administer suggestion for the cure or relief of mental and physical diseases.

NEW YORK

The usual antivivisection bill has been introduced by Senator McClelland. It provides for a commission of two physicians, two active members of antivivisection organizations and one supposedly neutral person to be appointed by the governor, to report the present conditions and extent of animal experimentation in the state and the present condition of enforcement of the law regulating scientific research. Governor Sulzer has appointed a commission of eight persons to investigate health conditions in the state, with a view to recommending improvement in the existing public-health laws. The commission is of high personnel and will undoubtedly be of great assistance in strengthening the health laws of the state. The members of the commission are: Dr. Herman Biggs of New York, chairman; Homer Folks of Yonkers, secretary; John Kingsbury, Yonkers, assistant secretary; Dr. Edward R. Baldwin, Saranac Lake; Ansley Wilcox, Buffalo; Miss Adelaide Nutting, a professor of nursing and health at Columbia University; Dr. John C. Otis, of Poughkeepsie, and Dr. W. E. Milbank of Albany.

MICHIGAN

The state board of health has asked for an appropriation of $25,000 for the coming year. Representative Glasner has introduced a bill requiring the physical examination of both parties as a condition for marriage licenses.

MINNESOTA

A bill has been introduced for a legislative reference bureau, similar to the one in Wisconsin. This will be of service in formulating public-health legislation. Another bill provides for the amending of the midwife law. Dr. W. T. Stone, a member of the house, has introduced a bill to stamp out pulmonary tuberculosis, and one to create a state tuberculosis commission and appropriating $500,000. A bill has also been introduced to provide for a tuberculosis sanatorium in each congressional district, and a bill to prohibit the use of common drinking-cups.

PENNSYLVANIA

The Morals Efficiency Committee has presented a bill to require a health certificate for a marriage license.

OHIO

House Bill 13 provides for the preservation of the health of factory employees, House Bill 27 provides what persons may enter into a marriage contract, House Bill 37 provides for the expenses of persons quarantined on account of contagious diseases, House Bill 51 prohibits advertising to cure sexual diseases, House Bill 58 prohibits the use of opium, House Bill 71 regulates the sale of hypodermic syringes, House Bill 85 regulates the conduct of tenement houses, and House Bill 90 provides state care for persons addicted to the use of morphin, cocain, etc.

TEXAS

Senate Bill 17 is an optometry bill. A bill providing medical supervision for schools is in preparation.

WISCONSIN

A bill has been introduced restricting marriage licenses to those physically and mentally sound and not closer related than first cousins; also a bill providing for the restriction of bovine tuberculosis.

Book Notices

SURGERY OF THE BRAIN AND SPINAL CORD. Based on Personal Experiences. By Prof. Fedor Krause, M.D., Geh. Medizinalrat, dirigierender Arzt am Augusta Hospital zu Berlin. English Adaptation by Dr. Max Thorek, Surgeon-in-Chief, American Hospital, Chicago. Volume II. Cloth. Price, $7. Pp. 819, with 94 illustrations. New York: Rebman Company, 1912.

This volume deals entirely with surgery of the brain in reference to epilepsy and tumors, and with Volume I, which appeared in 1910, furnishes a complete presentation of the surgery of the brain. These volumes are not presented as textbooks on the subject, but rather as an extended report of its present status, based on the personal experiences of the author, amplified by the work of his contemporaries in surgery, neurology and pathology, and illustrated by a veritable atlas of cuts and half-tone figures.

Epilepsy in all its clinical and surgical forms is presented in exhaustive detail. After some introductory remarks on physiology, jacksonian epilepsy is presented with such completeness that it is impracticable to record the details. The subject is treated under the general headings of etiology, tumors, infantile paralysis, injuries at birth, jacksonian epilepsy without anatomic findings, and the results of cortical excisions. Under "General Genuine Epilepsy," the results of some observations and experiments, and the use of Kocher's valve formation treatment are recorded. Under the heading of "Results Obtained from Operations for Epilepsy," a careful analysis of his work is presented, and the indications for operating, and the time, place, technic and course after operations are given in detail. Traumatic and reflex epilepsy are given due consideration. In all, over 200 pages are devoted to epilepsy and each phase of the subject from the symptomatology to the pathologic findings is presented with characteristically German thoroughness.

Neoplasms of the brain are presented under the headings of general symptoms of cerebral pressure, focal symptomatology, scheme of localization in the cerebellum and neoplasms of the frontal brain, central region, temporal lobe, isle of Riel, parietal lobe, occipital lobe, posterior fossa of the skull and at the base of the skull. Over 300 pages are devoted to this part of the book.

The value of the various chapters of the text is greatly enhanced by the citation of the details of observations covering the various clinical, diagnostic and operative features, and the illustrations are among the most satisfactory that we have ever observed. The translator has performed his difficult task with satisfactory results and the work of the publisher is excellent.

OXIDATIONS AND REDUCTIONS IN THE ANIMAL BODY. By H. D. Dakin, D.Sc., F.I.C. Monographs on Biochemistry. Cloth. Price, $1.40 net. Pp. 135. New York: Longmans, Green & Co., 1912.

Although the energy developed in the animal body is essentially all derived from the oxidation of foodstuffs, yet the chemical processes by which these substances are oxidized and their latent heat set free still remain among the most obscure of all biologic mysteries. There is no lack of incentive to investigate the chemistry of animal oxidations, since diabetes, acidosis and many other human diseases are unmistakably dependent on abnormalities of oxidation; but the problems involved have been so difficult as to discourage all but the best-trained and most persistent of chemists. Only within a very few years has any considerable progress been made in this field, and that progress is clearly and thoroughly recorded in this monograph by Dr. Dakin, himself one of the foremost of the investigators on animal oxidations. We welcome this new member of the series as a worthy addition to the invaluable set of "Monographs on Biochemistry."

A GUIDE TO THE DISSECTION OF THE DOG. By O. Charnock Bradley, M.D., D.Sc., F.R.S.E., Principal of the Royal (Dick) Veterinary College, Edinburgh. Cloth. Price, $3 net. Pp. 241, with 69 illustrations. New York: Longmans, Green & Co., 1912.

It is a serious question whether the methods of teaching anatomy in even our leading medical schools have kept pace with the development of medicine and surgery in other lines. It is also a question whether our present methods of teaching human anatomy and the anatomists turned out by our medical colleges are up to the standards of fifty years ago, when the field of surgery was far more limited than at present. In fact, it is doubtful whether the scientific world to-day could present an anatomic laboratory which, either in actual instruction given or in workmanlike dissections produced, could equal that of Sir John Hunter. One difficulty is that the medical student and surgeon of to-day is not willing to take the time to train his fingers as was the anatomist of previous generations. Too often we see the untrained medical student destroying structures on the cadaver without gaining any clear idea as to their structure or relation, but serenely satisfied with the kind of "dissection" which he is doing. No manual training-school would permit its students in the beginning to practice with saw, hammer or chisel on mahogany or rosewood as long as there was plenty of pine on which to learn the use of tools. For the same reason no medical student should be allowed to touch human anatomy until he has first acquired experience in dissection on the bodies of lower animals. For this reason, in addition to its scientific value, Dr. Bradley's dissection manual of the dog ought to prove of practical value to teachers and students of anatomy. It is comparatively small, with pages of convenient size, and is well written, well illustrated and inexpensive in price.

St. George Mivart's book on "The Cat," which has been of great value to the student of anatomy, is more elaborate and expensive and has been on the market for many years. Wilder & Gage's well-known book has also been in use for years. Dr. Bradley's book is timely and should be welcomed by teachers and students of anatomy. It is much easier in the average city to secure a supply of anatomic material for work on the dog than on the cat. While chiefly of interest to the prospective medical student, the book will also be of value to those who desire any accurate knowledge of the anatomy of the dog for practical reasons. Dr. Bradley has followed the Baden and Stuttgart modification of the B. N. A. His book will fill a manifest want as practically all of our literature on this subject consists of translations from the German.

HYPNOSIS AND SUGGESTION. Their Nature, Action, Importance and Position Among Therapeutic Agents. By W. Hilger, M.D. Translated by R. W. Felkin, M.D., F.R.S.E., with an Introduction by Dr. Van Renterghem. Translated by A. Newbold. Cloth. Price, $2.50. Pp. 233. New York: Rebman Company.

The advice of Dr. Meltzer to medical students not to try to qualify themselves as psychotherapeutists is in general sound. Still one may read with more or less profit the works of Du Bois and others which so enthusiastically advocate such methods. The present work in its English translation is the latest of this class published in this country and comes under the above-qualified statement. It is the production of one who has studied the subject, and he reports a large number of successes besides giving full references to other writers. Every experienced medical practitioner uses suggestion consciously or unconsciously, and its value is universally recognized. As regards hypnotic treatment, however, the case is different and we believe that it is probably well that it is so. One cannot help feeling a little incredulity in reading the accounts of permanent cures of chronic alcoholism and some other conditions that are reported. The book is well written and the translator has done his work well. Dr. Van Renterghem's introduction gives a useful historical sketch of hypnotism in modern medicine.

MANUAL OF MEDICINE. By A. S. Woodwark, M.D., M.R.C.P., Junior Curator of St. Bartholomew's Hospital Museum. Cloth. Price, $3.75. Pp. 409. New York: Oxford University Press, 1912.

The author states in the preface that one of the purposes of his book is to supply a "convenient reference" to the busy practitioner, and the book seems to fulfil its mission. The diseases are grouped according to the organ or region affected. There is a good chapter on immunity. In the discussion of insanity is a paragraph on moral insanity of which the author says, "This may occur at any age. It is characterized by kleptomania, incendiarism, sexual indecencies, dipsomania, homicide and suicide. Any type of insanity may exhibit moral delinquencies, but moral insanity is important as a type of imbecility seen in the habitual criminal." It is doubtful if American alienists would agree to this.

KIDNEY DISEASES. By W. P. Herringham, M.D., F.R.C.P., Physician to St. Bartholomew's Hospital. With Chapters on Renal Diseases in Pregnancy by Herbert Williamson, M.D., F.R.C.P., Assistant Physician-Accoucheur to St. Bartholomew's Hospital. Cloth. Price, $5.50. Pp. 378, with illustrations. London: Henry Frowde, 1912.

This work considers the diseases of the kidney as seen by the internist, and is really a consideration in detail of all the kidney cases the author has had the opportunity to examine. These cases are classified according to the clinical diagnosis. As each group of cases is described, there are interesting discussions as to the etiology and the relation of the various symptoms to the physical and urinary findings. Many of the cases were followed to autopsy and photomicrographs showing the most interesting lesions are scattered throughout the book. The chapters on renal diseases in pregnancy by Herbert Williamson take up the relation of eclampsia to the kidney, and the relation of the various types of kidney disease to pregnancy. An interesting fact brought out in the chapter on renal calculus is that in forty-four cases of renal lithiasis the stones were almost entirely composed of lime salts, and no uric acid stones were found. Either the old analyses are wrong or the chemistry of renal stone has changed in recent years. The relation of kidney disease and heart disease is discussed, and treatment is considered in an excellent manner. The author's exact technic of baths, sweats and packs is minutely described. One is told how to observe the patient during these procedures, and what to do for complications, should they arise.

MICROBES AND TOXINS. Dr. Etienne Burnet, of the Pasteur Institute of Paris. With a Chapter by Elie Metchnikoff. Translated from the French by Dr. Charles Broquet and W. M. Scott, M.D. Cloth. Price, $2 net. Pp. 316, with 71 illustrations. New York: G. P. Putnam's Sons, 1912.

The growing importance of the subject of microbiology makes it appropriate that the principal facts should be given to the public, without entering into such technical details as will be of interest only to professional bacteriologists. This has been done in the present volume, which gives a clear account of the character of microbes, both of the bacteria and the protozoa, with their action in the production of toxins and their relation to infection. The discussion of the subject of immunity appears to be especially valuable. The translation is excellent. While this work is not specifically medical, many practitioners will find it useful as a means of enriching their knowledge of this important subject.

PRINCIPLES OF MICROBIOLOGY. A Treatise on Bacteria, Fungi and Protozoa Pathogenic for Domesticated Animals. By Veranus Alva Moore, B.S., M.D., V.M.D., Professor of Comparative Pathology, Bacteriology and Meat Inspection, New York State Veterinary College. Cloth. Price, $3.50. Pp. 506, with 101 illustrations. Ithaca, N. Y.: Carpenter & Co., 1912.

A thorough examination of this work shows that it has been carefully prepared to meet the needs of the veterinary student, whose field of microbiology is essentially different from that in which the medical student finds his chief interest. The general principles of the science and the laboratory technic are stated clearly and with thoroughness. This section would do equally well for the study of the medical student. The study of the specific organisms is, however, somewhat lacking in detail and naturally the organisms considered are different from those that are of chief importance to the physician. The work is well illustrated.

STOMATOLOGY IN GENERAL PRACTICE. A Text-Book of Diseases of the Teeth and Mouth for Students and Practitioners. By H. P. Pickerill, M.D., Ch.B., M.D.S., Hon. Stomatologist to the General Hospital, Dunedin. Cloth. Price, $5.50. Pp. 268, with 65 illustrations. London: Henry Frowde, 1912.

Few medical men could tell without investigation where the University of Otago is situated. It will not be uninteresting therefore to note that the author of the present work is at the head of the dental school of this university, which is an independent school of the University of New Zealand, located at Dunedin. The work attempts to fill the gap between dentistry and medicine. The author says, with reason, that it should be compulsory for every medical student to attend a short course on dental surgery or stomatology. Such a course is obligatory in the University of Otago, and the present publication is an amplification of lectures delivered to a postgraduate class of medical practitioners and also to medical students.

The work includes the anatomy and physiology of the teeth, stomatitis, gingivitis, caries of the teeth, deformities of the jaw and teeth, fractures of the jaw, oral tumors, etc. The surgical treatment of the teeth is limited practically to the local treatment of deep cavities, pericementitis and alveolar abscess. The operation of extraction is described, but the filling of teeth is merely mentioned. The technic of mechanical dentistry is not entered into. The surgery of the jaw and especially the treatment of fractures is described more fully.

Of the importance of the field covered by this volume there can be no doubt, and the student or practitioner who wishes to explore it cannot well choose a more competent guide than the author of the present work.

DEVELOPMENTAL ADHESIONS AFFECTING THE LOWER END OF THE ILEUM AND THE COLON. By H. M. W. Gray, M.B., F.R.C.S., Surgeon and Lecturer on Clinical Surgery, Royal Infirmary, Aberdeen, and William Anderson, M.B., Ch.B. Paper. Price, 1 shilling. Pp. 26, with 9 illustrations. Aberdeen: The University Press, 1912.

This is a short article with eight full-page illustrations. The authors believe that those adhesions which are known as Lane's terminal ileac kink, Jackson's membrane and the splenic pericolic adhesions and mesosigmoid adhesions are of congenital origin; therefore they are against Lane's explanation that the bands are the result of the crystallization of the lines of strain, but no convincing proof is offered of the congenital origin of these bands. Brief histories of ten operative cases are given.

The authors believe that all bands of this kind should be divided and the raw surface, if any, covered with peritoneum or omentum. An unwarranted optimism is shown when speaking of results by the statement, "All our cases have been relieved of their pains." The effect of this, however, is lost, for on the next page the following sentence is found: "It is but fair to say that a good many of our cases have been so recently operated on that permanency of results cannot be talked of." This sums up the situation: too much generalization on too little evidence.

CLINICAL DISORDERS OF THE HEART-BEAT. A Handbook for Practitioners and Students. By Thomas Lewis, M.D., D.Sc., M.R.C.P., Lecturer in Cardiac Pathology, University College Hospital Medical School, London. Cloth. Price, $2 net. Pp. 104, with 48 illustrations. New York: Paul B. Hoeber, 1912.

This little book is devoted to a systematic consideration of "Sinus Irregularity," "Heart-Block," "Premature Contractions," "Tachycardia," "Auricular Fibrillation" and "Alternation of the Pulse." The first chapter is devoted to a consideration of the recognition and identification of the cardiac mechanism. So much light has been thrown on the significance of cardiac irregularities by experiment that a new chapter must be added to text-books to embrace it. Not only do changes in the regularity and character of the pulse denote cardiac disease, but often also by a knowledge of these changes the part of the myocardium involved can be told.

This book is a clear and full exposition of our present knowledge. Lewis has described the recognizable disorders of rhythm so that they can be recognized without unusual instruments or means of investigation. The book is commendable and is needed. It covers the newest field in the study of heart diseases.

ENZYMES. Six Lectures delivered under the Herter Lectureship Foundation at the University and Bellevue Hospital Medical College. By Otto Cohnheim, A. O. Professor of Physiology, Heidelberg. First edition. Cloth. Price, $1.50 net. Pp. 173. New York: John Wiley & Sons, 1912.

These lectures, delivered before an audience of physicians and medical students, contain a clear and concise discussion of enzymes by a recognized authority and investigator in that field. The various topics are considered primarily from the biologic point of view. The ferments in the alimentary canal, the blood and the tissues are reviewed, as well as the methods of obtaining and purifying enzymes, the general properties of the enzymes, and their mode of action. To physicians this volume should be of special interest.

Society Proceedings

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held Dec. 4, 1912

The President, DR. GEORGE E. DE SCHWEINITZ, in the Chair

DR. JOHN B. DEAVER read a paper entitled: "A Review of 534 Operations on the Mammary Gland." It will appear in THE JOURNAL.

Results with Tuberculin in Advanced Chronic Ambulatory Tuberculosis

DR. A. P. FRANCINE and DR. H. J. HARTZ described a series of cases of chronic fibroid type; the patients had developed a fair resistance, yet there was a gradual deterioration in spite of weight and strength. The tuberculin used was the tubercle bacilli extract after the method of S. G. Dixon. The injections were given, as a rule, once a week. All the patients were sufficiently improved to return and to remain at regular work during or following the course of the tuberculin. This paper will appear in THE JOURNAL.

DISCUSSION

DR. JAMES TYSON: The evidence as to the actual effect of the tuberculin treatment as given in this paper is the clearest I have yet heard. The cases are limited, the duration and method of treatment are well stated and the results are definitely indicated.

DR. JOHN B. DEAVER: It may seem strange for a surgeon to discuss the treatment of tuberculosis by tuberculin. For a long time, however, I have advocated the treatment of many surgical lesions with tuberculin. I am glad to see that the doctors are waking up, and I feel that tuberculosis surely will be cured along purely scientific lines.

DR. S. SOLIS-COHEN: I should like to ask Dr. Francine on what signs, symptoms or principles the injections were discontinued. In my experience in the treatment of pulmonary tuberculosis with tuberculin I have seen in certain selected cases an additional impetus to recovery. When a patient has been improving but, reversing the prophet's injunction, ceases to do well, then, perhaps, by timely injection of tuberculin for a limited period, we can arrest the retrograde movement, or even convert it into progress. Apart from this, I have never found any remarkable results. In some cases, however, the result was worth while. Dixon's tuberculin I have no personal experience with, but the paper illustrates its value. Two other preparations I have used. One is "tuberculinum purum" from which are extracted the harmful albumoses to which the untoward symptoms of Koch's early preparation were attributed. Then, second, there is Latham's method of administration by the mouth, instead of hypodermically. Latham used "tuberculin residue," and to follow up his observations in his own way, I used the same thing. It is commonly termed "T. R." The tuberculin residue may be administered by mouth, in an initial dose of 1/100,000 mg., increased, if necessary, to as much as 1/100 mg. The general rules of cautious increase apply here as everywhere. Latham prefers to give the tuberculin in horse-serum because he thinks that the absorption is better. I find that beef-juice or skimmed and diluted milk or whey answer just as well. Certain manufacturers have now at my request undertaken to put it up in tablet form in various strengths. I have seen as good results from this as from its hypodermic use and find it a very convenient method of administration with ambulant patients, the most readily controlled when prolonged administration is indicated and when the administration is intermitted and renewed from time to time.

DR. GEORGE E. DE SCHWEINITZ: While not entirely germane to the subject of pulmonary tuberculosis, I desire to confirm the high value which Dr. Francine has placed on the proper use of tuberculin as a therapeutic agent in so far as various tuberculous lesions of the eye are concerned, particularly those that affect the uveal tract, the sclera and the cornea, and since this remedy has come into vogue these ocular lesions have yielded much more readily than they did under other and older therapeutic measures.

DR. A. R. FRANCINE: The glandular involvement was a tuberculosis of the glands uncomplicated by any pulmonary localization, and these glands were on the point of breaking down. In regard to the length of treatment, no definite rule can be laid down. The injections must be adapted to the patient's resistance, general health, improvement, etc. I should think a period of a year should be the outside limit of treatment. After a reasonable period, should the patient not maintain the improvement, there is no objection to repeating the course. I have never given tuberculin by mouth. I prefer tuberculin of a mild toxicity, which our experience has proved Dixon's fluid to be. The patients were all practically afebrile and had developed a fair resistance (through prolonged treatment) and were in fair general health.

Medicolegal

Sufficient Allegations to Show Liability for Malpractice

(Williams vs. Union Pacific Railroad Co. (Wyo.), 124 Pac. R. 595)

The Supreme Court of Wyoming reverses a judgment rendered for the defendant on a demurrer to the plaintiff's petition on the ground that it failed to state facts sufficient to constitute a cause of action. The court says that it was to be observed that the plaintiff alleged in the petition, among other things, that the defendant did not furnish the plaintiff with proper hospital accommodations in the hospital provided for injured employees, and did not treat him properly therein, and did not furnish him the services of skilful or competent physicians or trained or capable nurses, and did not use or exercise due or reasonable care in the selection of such nurses and physicians and surgeons as were furnished to the plaintiff. With reference to cases of this character, it may be said that in general it has been held that a railroad company is not liable for the negligence of its surgeons if it has used reasonable care in their selection. The court thinks that is the correct rule. It is also held that the duty of a charity hospital ends with the selection of capable surgeons and nurses. But on demurrer everything alleged in the petition must be taken as true. In that sense the defendant admitted that it did not furnish the plaintiff the services of skilful or competent physicians or trained or capable nurses, and did not use due or reasonable care in the selection of such nurses and physicians and surgeons as were furnished to the plaintiff.

It was necessary that the petition should by appropriate allegation show that the absence of due and reasonable care in selecting a skilful and competent physician and surgeon was a proximate cause of the injury received at the hands of the surgeon. Among other allegations, it was alleged that the physician furnished did, in the performance of the operation, "carelessly and negligently, and unnecessarily cut a large hole in the neck of the plaintiff's bladder." The words "carelessly" and "negligently," as thus used, were synonymous with the word "unnecessarily." The latter negatived the necessity of cutting the bladder in the performance of the operation, while the former referred to the manner of doing, and not to the necessity of doing. The necessity of cutting the bladder in the performance of the operation rested in the judgment of the surgeon, and called into activity his power to perceive and perform, which was the measure of his skill. If, therefore, he performed an act unnecessary to the operation with or without negligence, such act would be attributable to error of judgment or want of skill.

By the plaintiff's petition it was alleged, in substance, that damage resulted from and by reason of the failure and neglect of the defendant to furnish a skilful and competent surgeon, and the negligence, unskilfulness and incompetency of the defendant's physician and surgeon so furnished. On the issue joined no recovery could be had without showing want of due

and reasonable care in selecting the physician and surgeon and that the physician and surgeon selected was in fact incompetent and unskilful.

Statute of Frauds Not Involved in Case Made by Physician

(Williamson vs. Green (Ala.), 58 So. R. 974)

The Court of Appeals of Alabama reverses a judgment rendered for the defendant Williamson, in this action for an amount claimed by the plaintiff, Green, as due by account for professional services rendered by him as a physician or surgeon to one Clifford Acklin at the request of the defendant. The court says that the defendant pleaded, for one thing, the statute of frauds, setting up that the contract sued on was not in writing and was void; the same being for the debt of one Dan Acklin or Clifford Acklin. The evidence offered by the plaintiff tended to show that the defendant, after he had seriously injured Clifford Acklin by striking him on the head with an ax, by a message or direction given by him to one Esslinger, authorized the plaintiff to be called to assist in the treatment of the injured man, and that the plaintiff rendered the service as claimed under his employment for the defendant pursuant to such message or direction. The testimony of Esslinger as to the defendant authorizing or directing the employment of the plaintiff was flatly contradicted by the testimony offered in behalf of the defendant. According to the version given by the defendant and other witnesses in his behalf of what occurred between him and Esslinger, he did no more than indicate to Esslinger a willingness to stand for Dan Acklin, the father of the injured man, for a physician's bill not to exceed $10, not however then or subsequently agreeing to do this, but merely directing Esslinger to tell the physician who was then attending on the injured man to come to his (the defendant's) house, and that he would then determine if he would stand for the bill of another physician.

As the court sees the evidence, that for the plaintiff showed an employment of him by the defendant to render professional services to the injured man, while the opposing evidence was to the effect that the defendant did not in any way agree to be bound for those services, either in his own behalf or for another, for whose obligation he was to stand or be liable. In that condition of the evidence, no phase of it showed the making of a contract by the defendant the validity of which was dependent on a compliance with the requirements of the statute of frauds. In other words, there was no evidence tending to support a plea of the statute of frauds. The defendant by his pleas having tendered an issue under that statute, but no such issue being involved in the evidence adduced in the trial, the plaintiff was entitled, on appropriate request to that end, to have withdrawn from the consideration of the jury an issue raised by the pleadings but not by the evidence in the case. His request of a written charge, to the effect that the statute of frauds had nothing to do with the case as developed in the evidence, was a proper request for an instruction to the jury as to the issues in the case to which their consideration should be confined, and it should have been given.

Failure to Call Attending Physicians as Witnesses

(Kump vs. Woods (Ind.), 98 N. E. R. 369; Mortimer vs. Daub (Ind.), 98 N. E. R. 845)

The Appellate Court of Indiana, Division No. 2, holds, in the first case, that the fact that the plaintiff in a personal injury case does not call the physician who attended him at the hospital to testify as to his injuries should not be considered by the jury as detrimental to the plaintiff's case. And, in the second case, the Appellate Court of Indiana, Division No. 1, holds that an instruction was correct which told the jury that the law recognizes the relation of physician and patient as confidential, and that if the confidential privilege is claimed by the patient, the physician is not a competent witness to testify as to matters communicated to him as such by the patient in the course of his professional services, rendered in such case, and further that the fact that such physician is not called by the plaintiff as a witness should not in any manner influence the verdict.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

January, LXVII, No. 521, pp. 1-216

1 *Effects of Industrial Strain on Working Women. R. S. Morton, New York.
2 Progress of Year in Obstetrics. G. L. Broadhead, New York.
3 Bougie Removed from Abdomen Ten Weeks After Introduction per Vaginam. J. Douglas, New York.
4 Diagnosis of Extra-Uterine Pregnancy. S. M. Brickner, New York.
5 Fistula in Ano. S. E. Tracy, Philadelphia.
6 Fibroid Tumor of Stomach with Perforating Ulcer; Transgastric Resection; Recovery. R. E. Skeel, Cleveland.
7 *Septic Pelvic Thrombophlebitis. K. I. Sanes, Pittsburgh.
8 *Complete Absence of Milk in Primipara. F. Reder, St. Louis.
9 *Some Moral and Ethical Aspects of Feticide. E. A. Weiss, Pittsburgh.
10 Some Complications of Uterine Fibroids Demanding Early Diagnosis and Immediate Operation. J. E. Sadlier, Poughkeepsie, N. Y.
11 *Some Reasons for Advising Early Operations for Fibroid Tumors of Uterus. R. B. Hall, Cincinnati.
12 *Selection of Anesthetic for Abdominal and Pelvic Surgery. R. E. Skeel, Cleveland.
13 Diagnosis and Operative Treatment of Diseases of Genitalia in Female Insane. B. S. Schultze, Jena, Germany.
14 *Conservative Operations on Ovaries, Including Report on 112 Cases. W. H. Humiston, Cleveland.
15 Preparatory Treatment for Nursing and Care of Nursing Mother. E. P. Davis, Philadelphia.
16 Methods of Encouraging Breast-Feeding and Contra-Indications to Breast-Feeding. M. H. Fussell, Philadelphia.

1. Abstracted in THE JOURNAL, Oct. 19, 1912, p. 1483.

7, 8 and 9. Abstracted in THE JOURNAL, Sept. 28, 1912, p. 1212.

11, 12 and 14. Abstracted in THE JOURNAL, Oct. 5, 1912, p. 1317.

Archives of Internal Medicine, Chicago

January 15, II, No. 1, pp. 1-120

17 *Cysts of Entameba Tetragena. S. T. Darling, Ancon, C. Z.
18 *Syphilitic Aortitis; Its Diagnosis and Treatment. W. T. Longcope, New York.
19 *Minute-Volume and Alveolar Air in Pulmonary Emphysema. C. F. Hoover, Cleveland.
20 *Ventilation of Steel Sleeping Cars. T. R. Crowder, Chicago.
21 *Modification of Technic of Wassermann Reaction. A. F. Coca and E. S. L'Esperance, New York.
22 *Chemistry of Renal Calculi. M. Kahn, New York.
23 Causes of Variation in Platelet Count. W. W. Duke, Kansas City, Mo.

17. **Cysts of Entamoeba Tetragena.**—Three cases of infections by *Entamoeba tetragena* are reported by Darling. These cases illustrate the cyst production of *E. tetragena*, its intermittency, the absence of cysts during acute symptoms and their presence in formed stools long after the subsidence of acute symptoms. The gradual disappearance of cysts in moist chamber preparations with a concomitant loss of infectiousness of the stool, and the loss of infectiousness by drying for seven weeks are shown. The development of amebulas within the cysts and their emergence and fate in the fecal mass is described. It would appear that infection in man is the result of the contamination of food with a small amount of fecal matter containing a great many cysts, during the first day or two after passing. In one experiment, kittens were fed with a pure culture of tetragena cysts forty-eight hours old. This caused lesions in the small bowel in which large trophozoites were found with the nuclear characters of *E. tetragena*, *E. histolytica* and *E. nipponensis*. Darling believes that this not only favors the opinion held of the identity of *E. histolytica* and *E. nipponensis* with *E. tetragena*, but it shows that specific identification of histolytica and nipponensis cannot be made from the large vegetative trophozoites alone, but the essential features of the life cycle must be seen. The very great importance of examining the stools of all convalescent and recovered cases of entamebic dysentery for cysts, and thus detecting "carriers" is made apparent, for it is the cyst that is the infecting agent and not the large trophozoite.

18. **Syphilitic Aortitis.**—The clinical cause and history of Longcope's cases of syphilitic aortitis were very carefully analyzed by him. He concludes from his study that syphilis produces a characteristic lesion of the aorta, which is responsible, as is shown by autopsy statistics and the Wassermann reaction, for most aneurysms, about 75 per cent. of cases of aortic

insufficiency in adults, many cases of dilatation of the aorta, and a certain group of cases of angina pectoris. The infection of the aorta probably takes place during the secondary stage, and though the symptoms and signs of syphilitic aortitis with the complications may develop within a few months of infection, the process usually remains latent, or unrecognized for an average of sixteen to seventeen years. Thus, syphilitic aortitis is probably a common cause for the presence of a positive Wassermann reaction in so-called latent syphilis. The early symptoms and signs of syphilitic aortitis are a positive Wassermann reaction, precordial pain, slight dyspnea, attacks of paroxysmal dyspnea and angina pectoris, cardiac hypertrophy, increased pulsation of the vessels of the neck and signs of dilatation of the aorta. The precordial pain, paroxysmal dyspnea and angina pectoris are temporarily or permanently relieved by repeated injections of salvarsan, but in certain instances these symptoms, especially after large doses, may be aggravated for the first forty-eight hours after injection. The paroxysmal dyspnea, which may be regarded as acute bronchiospasm, and possibly the angina pectoris in syphilitic aortitis, is dependent on the inflammatory reaction in the wall of the aorta, and may be regarded as reflex disturbances set up by the syphilitic process involving the root of the aorta.

19. **Minute-Volume and Alveolar Air in Pulmonary Emphysema.**—The essential result of Hoover's observations of pulmonary emphysema is the direct evidence that in emphysema the patient suffers from an impaired alveolar ventilation of the lung and not an impairment of the lung as the organ of external respiration. Furthermore, the evidence seems very conclusive that the alveolar air constitutes a very diminished part of the minute-volume of air. So the minute-volume in any given case of emphysema is not a measure of alveolar ventilation. Hoover concludes that this diminution of the proportion of alveolar air must be due to an increase of the dead space. How, he asks, can we account for an increase of the dead space in pulmonary emphysema? Can the increase of the dead space be explained best by bronchiolar spasm, bronchiolar atony, or swelling of the bronchial mucosa? Bronchiolar atony, that is, an elongation and broadening of the bronchioles, seems the most consistent with an increase of the dead space. Bronchiolar spasm or swelling of the bronchial mucosa could give an increase of the dead space only by an inspiratory enlargement of that portion of the air passage which lies between the alveoli and the larynx. Hoover is now investigating this phase of the subject experimentally and will report later on his results.

20. Abstracted in THE JOURNAL, October 5, p. 1316.

21. **Modification of Wassermann Reaction.**—The technic proposed by Coca and L'Esperance is described as follows: Antigen.—The muscular tissue is dissected out from the heart of a recently slaughtered ox, and, after being finely comminuted in a meat grinder, is shaken well with about ten volumes of 95 per cent. alcohol. The alcoholic extract is filtered after five to ten days and evaporated nearly to dryness with the use of an electric fan. The sticky residue is extracted with ordinary ether and the ether extract again evaporated with the use of the fan, supplemented finally with gentle warming. The resulting residue is then extracted with water-free ether in small quantity and the clear solution obtained by centrifugation is mixed with five volumes of acetone. After thorough shaking, the fluid is poured off the waxy precipitate, which is then shaken several times with fresh portions of acetone. The stock solution is a filtered 2 per cent. solution of the lipoids in pure methyl alcohol. For each series of tests a fresh emulsion is made by diluting one part, by volume, of the stock solution up to ten parts with physiologic salt solution (Ringer's). Of this 0.2 per cent. emulsion, 0.4 c.c. has never produced the slightest hemolysis when mixed with 0.1 c.c. of a 5 per cent. suspension of sheep's blood, nor is that amount anticomplementary with 0.01 c.c. of guinea-pig's serum (indicator 0.1 c.c. of 5 per cent. sensitized sheep's blood).

Complement.—This function is supplied by 0.1 c.c. of a 1 to 10 dilution of fresh guinea-pig's serum in physiologic salt solution. Whenever this serum is naturally hemolytic for sheep's blood-corpuscles, the natural hemolysin is to be removed by the cold separation method, one to two hours at 0 C. in contact with washed sheep's corpuscles. Indicator.—Two per cent. sheep's blood corpuscles sensitized with two to three minimum hemolytic doses of immunized rabbit's serum are used as indicator. To each tube is added 0.25 c.c. of this suspension, representing 0.1 c.c. of the usual 5 per cent. suspension. In the practical performance and reading of the Wassermann test the authors proceed as follows:

1. All the reagents entering into the reaction of fixation can be most conveniently diluted 1 to 10 with physiologic salt solution. The sensitized sheep's blood suspension may be 2 per cent. (unit=0.25 c.c.) or 5 per cent. (unit=0.1 c.c.).

2. Five different amounts of a 0.2 per cent. emulsion of ox-heart lipoids are to be combined with 0.2 c.c. of the patient's diluted serum and 0.1 c.c. of the diluted guinea-pig's serum. The five amounts of antigen are 0.1, 0.05, 0.02, 0.01 and 0.001. A series of examinations with non-luetic sera should be made for the purpose of determining the lower limit of pseudo-reaction.

3. If complete fixation of complement occurs with all of the five quantities of "antigen," or with only the smallest two or three quantities, we report a "strongly positive" reaction; if with 0.001 c.c. hemolysis has not been prevented, but fixation has occurred with all the other combinations or with the lesser one or two quantities of "antigen," we report a "positive" reaction; if hemolysis is not prevented with 0.001 nor with 0.01 c.c., but fixation occurs with any of the other amounts of the "antigen," we report a "weakly positive" reaction.

22. **Chemistry of Renal Calculi.**—Kahn found that the large majority of renal stones are composed of the oxalate of lime; sometimes the calcium salt is the only component of the stone. Uric acid and the urates are found in small quantities in all renal calculi, but it is rare to find a nephric stone composed mainly of uric acid or the urates. The shape, color, consistency, etc., of a stone do not constitute criteria of its chemical composition. Gouty tophi are not always composed of uric acid or the urates. In three concretions examined, a negative murexid test was invariably obtained.

Archives of Ophthalmology, New York

January, XLII, No. 1, pp. 1-115

24 Retinal Changes in Adolescents. A. Knapp, New York.
25 *Eye Troubles Caused by Use of Hair-Dyes. J. S. Fernandez, Havana, Cuba.
26 Peribulbar Implantation Cyst After Removal of Staphyloma of Cornea. S. Samuels, New York.
27 Calcareous Degeneration of Cornea and Lens Capsule. F. Tooke, Montreal.
28 Short Clinical Accounts with Microscopic Demonstrations of Two Cases of Tumor of Optic Nerve. R. Sattler, Cincinnati.
29 Clinical Course of Conjunctival Affections Associated with So-Called Trachoma Bodies. M. Cohen, New York.
30 Acquired Retraction Movements of Eyes. R. Salus, Prague.
31 Chemistry of Senile Cataract. A. Jess, Würzburg.
32 Hemianopic Pupillary Paralysis and Hemiopic Prism Phenomenon. A. Jess, Würzburg.

25. **Eye Troubles Caused by Hair-Dyes.**—All hair-dyes in use at the present time, Fernandez says, are more or less toxic in effect, and may give rise, under certain circumstances, to general and local eye troubles. The injurious effects experienced are of two classes, inflammatory and toxic, although both may be present at the same time. The trouble may be only ocular in character, or it may affect the general system as well as the eyes from the start. The dyes which do the most harm are those containing anilin derivatives. As they are very easily prepared, these are the dyes most generally used. Fortunately, as the anilin derivatives are powerful colorants, a smaller quantity of the dye is necessary to produce the desired results, and there is, therefore, less danger to the eyes and the general health. Fernandez suggests an act of legislature placing the manufacture of hair-dyes and similar cosmetics in the hands of chemists or other persons skilled in the use of drugs, whose duty it would be to use the least harmful substances and to mix them accurately. The irritant action of many of the hair-dyes gives rise to the formation of vesicles on the scalp, the dried fluid from which produces crusts and causes the hair to fall out in tufts. This condition is accompanied by intense itching of the scalp; general indisposition and lowness of spirits, followed by vertigo; slight renal disturbances are frequently seen, and sometimes albuminuria or even uremia may set in; cephalalgia, sleeplessness, dyspnea, delirium arrhythmia and vomiting may occur, and there is almost always edema of the face and eyelids. The ocular disturbances may at times be the only sign of poisoning and they may occur without pruritus or other skin disorders. Some authors consider dermatitis to be the result of the poisoning; but Fernandez believes it the portal of absorption, because the

irritation of the skin and the accompanying vesicles makes the process of absorption very much easier. The effects, however, are due in most cases to the nature of the coloring substance and the susceptibility of the user. The edema extends to the eyelids and closes them, and as this condition is usually followed by chemosis, the patient experiences great difficulty in opening his eyes and is, consequently, much alarmed. In most of the cases observed by him, the vision was not impaired, because as soon as the edema of the eyes subsided, the patient got well; the fundus was not affected.

Boston Medical and Surgical Journal

January 16, CLXVIII, No. 3, pp. 73-108

33 *Antitoxin Administration. W. H. Park, New York.
34 Importance of Venereal Disease. J. H. Cunningham, Boston.
35 Relation of Accident and Injury to Pulmonary Tuberculosis from Medicolegal Point of View. J. B. Hawes and A. Drinkwater, Boston.
36 Chronic Focal Suppuration of Head with General Symptoms, Especially in Adults. F. P. Emerson, Boston.
37 Fracture of Fifth Metatarsal Bone by Inversion of Foot. W. P. Coues, Boston.
38 Brain Tumor; Operation; Autopsy Findings. E. D. Bone and A. H. Peabody, Waverley, Mass.

33. **Antitoxin Administration.**—Two things are emphasized by Park in speaking of the administration of diphtheria antitoxin as possibly tending to a better treatment. The giving of larger doses than are necessary does not, he says, do harm, except the expense to the city or patient; but an insufficient first dose, and in suitable cases the fact of not giving it intravenously, may be a serious mistake. There is a great advantage in giving all in one injection, instead of in two to four injections. Two goats were used, one receiving 15,000 units subcutaneously in one injection and the other, four doses of 5,000 units each at intervals of about eight hours. At the end of eighteen hours, there were 12 units in each c.c. of the blood in the goat receiving 15,000 units, and only 3½ units in the one receiving the divided doses, because only the first portion had had any possibility of being absorbed. It is only at the end of the third day that 20,000 units in divided doses equals in effect the single dose of 15,000 units; and during the first day there has been but one-third the effect. His opinion is that we should give in the first dose all that we think is required for the entire disease; and if we find it necessary to give a second dose, we have misjudged the amount necessary. He is certain that much of the good effect believed to be due to the second and the third doses has been due to the fact of the further absorption of the first dose. At the Willard Parker Hospital they are practically eliminating the second dose, and the results seem as good as at Kingston Avenue Hospital, where the same size initial dose is repeated in later doses. We should keep in mind that we give a thousand times as much antitoxin as is required for the amount of toxin in a case. The great excess is for the purpose of pushing it out into the tissue fluids of the diseased parts and wherever toxin may have passed. Speaking of the intravenous injection, he urges it not only in cases of malignant diphtheria but in all cases of tetanus. The difference, during the first day, in the amount of antitoxin in the blood when injected intravenously and when injected subcutaneously, is very great. At the end of six hours, one has with a suitable amount by the subcutaneous method two units, and by the intravenous method 20 units in each c.c. As the hours pass, the one diminishes and the other increases; but even at the end of twenty-four hours there are 12 units against 6 units. Park feels certain that 5,000 units given intravenously have as much effect as 20,000 given subcutaneously. The serum must always be warmed to blood-heat before injecting. In all cases of septic diphtheria, Park would give a dose intravenously; but in mild and early cases, he regards it as sufficient to give it subcutaneously. Intramuscular injections are absorbed in about one-half of the time required by the subcutaneous ones, when the serum stays in the muscle-substance; but, in practice, it often escapes.

Bulletin of Johns Hopkins Hospital, Baltimore

January, XXIV, No. 263, pp. 1-32

39 Baltimore Epidemic of Streptococcus or Septic Sore Throat and Its Relation to Milk-Supply. L. P. Hamburger, Baltimore.
40 *Effect of Hypersensitiveness to a Tuberculo-Protein on Subsequent Infection with Bacillus Tuberculosis. C. R. Austrian, Baltimore.
41 Consideration of Milk-Supply of Baltimore. W. W. Ford, Baltimore.
42 Malum Perforans in Diabetes Mellitus. J. T. Sample and W. L. Gorham, Baltimore.

40. **Effect of Hypersensitiveness to Tuberculo-Protein.**—The findings in Austrian's series of experiments are unique, for so far as he has been able to determine, an acute lethal tuberculosis had not previously been produced in rabbits with the small infecting doses of human type of tubercle bacilli here used. Several of the sensitized rabbits after inoculation developed the clinical picture described by Theobald Smith in rabbits inoculated with the bovine type of the organism. Eight of the sensitized animals developed dyspnea and five died from tuberculosis within sixty-seven days after inoculation. In five sensitized and in two control animals, tubercles developed at or near the site of the intravenous inoculation. The significance of this is not clear, inasmuch as, contrary to expectation, the animals in which it developed showed no apparent difference in general reaction from that shown by those in which no local lesion developed. With the exception of two pairs of animals, the tuberculosis which developed was more extensive and more severe in the sensitized rabbits than in the non-sensitized infected controls. Austrian concludes that hypersensitiveness produced in guinea-pigs and in rabbits by sensitization with a protein obtained from the bacillus tuberculosis, human type, by water extraction, exerts a baneful or a neutral influence on a subsequent tuberculous infection. Whether or not a similarly produced condition of hypersensitiveness would influence differently the course of infection with a very few organisms cannot be stated.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

January, V, No. 7, pp. 93-127

43 Noise and Insomnia. L. F. Barker, Baltimore.
44 Injurious Effects of Loud Noises on Organ of Hearing. H. Friedenwald, Baltimore.
45 Eliminating Noise from Baltimore. W. T. Watson, Baltimore.

Canadian Medical Association Journal, Toronto

January, III, No. 1, pp. 1-86

46 Surgical Treatment of Exophthalmic Goiter. H. A. Bruce, Toronto.
47 Case of Hemolytic Jaundice with Splenomegaly. F. McPherson and H. Orr, Toronto.
48 Standardization of Disinfectants. J. T. A. Walker, New York.
49 Operative Treatment of Cleft Palate. P. Weatherbe, Halifax.
50 Results of Treatment of Syphilis as Shown by Wassermann Reaction. G. S. Strathy and G. Bates, Toronto.
51 Apparatus for Continuous Aspiration. P. K. Menzies, Toronto.

Illinois Medical Journal, Springfield

January, XXIII, No. 1, pp. 1-124

52 Pioneer Medical School in Illinois. C. E. Black, Jacksonville.
53 Clinical Value of Gonorrhea Complement Fixation Test. V. D. Lespinasse and M. Wolff, Chicago.
54 Principles and Advanced Methods in Vaccine Therapy. F. M. Wood, Chicago.
55 Brill's Disease—Mild Typhus Fever—in Michael Reese Hospital. S. Strouse, Chicago.
56 Milk. J. W. Van Derslice, Oak Park.
57 *Essentials of New Chicago Milk Ordinance. W. O. Nance, Chicago.
58 Sluder Method of Tonsillectomy. A. M. Corwin, Chicago.
59 Influence of Spina Bifida on Prolapse of Genitalia. H. F. Lewis, Chicago.
60 Pathogenesis of Glandular or Secondary Form of Infantile Tuberculosis. J. Ritter, Chicago.
61 *Bronchial Asthma Due to Hypersusceptibility to Hens' Eggs. K. K. Koessler, Chicago.
62 Muscle Degeneration and Osteoma. L. Ryan, Chicago.
63 Case of Cranial Injury Associated with Spinal Lesion. A. B. Eustace and R. C. Hamill, Chicago.
64 Combination Operations Between General Surgeon and Otolaryngologist. J. C. Beck, Chicago.
65 Some Pleasures of County Secretary. S. W. Weir, Marshall.
66 County Society Bulletin. W. H. Watterson, Waukegan.

57. **New Chicago Milk Ordinance.**—The essential provisions of the new ordinance are set forth by Nance as follows: 1. Two grades of milk that may be sold in Chicago are established, the one known as "inspected" milk; the other "pasteurized." "Inspected" milk (1) is to be produced on farms inspected and approved by the health department and shall score not less than 65 points out of a possible 100 (after January, 1915, 70), on a score card which is practically a copy of that recommended by the United States government. These points relate to equipment and methods and cover the condition of the health, comfort, feeding and watering of the cows, the condition of the milk-room, stable and utensils and

methods of handling the cows and of caring for the milk from its first production to its storing and transportation. 2. Inspected milk shall not contain more than 100,000 bacteria per c.c. from October 1 to May 1, and not more than 150,000 from May to September. 3. The farmer or dairyman must procure a department permit subject to the condition that every case of contagious disease in connection with the dairy shall be reported at once. 4. Before June 30, 1913, the producer must file certificates showing that his cows have been inspected by a competent veterinarian and are free from tuberculosis and other infectious diseases. 5. Every milk can must be plainly marked with the serial number of the permit, and the grade of milk and each container must bear the name of the day of the week on which the milk was first enclosed in the bottle. 6. Both grades of milk, inspected and pasteurized, must be kept at a temperature not higher than 60 F. from the time of its production to the time it reaches the consumer. After June 1, 1914, the temperature must be at least as low as 55 F. Milk that meets all of these requirements is allowed to enter the city and be sold without any formality. Milk produced in conformity with standards slightly lower than these, from dairies scoring at least 55 points, and not containing more than 750,000 bacteria per c.c. from October to May, and 1,000,000 from May to October, must be pasteurized and may be sold as such, plainly marked as to grade and dated with the name of the day of the week the milk was pasteurized. Pasteurization must be efficient and under the provisions of the ordinance the health department must inspect the pasteurizer and the plant and surroundings. The pasteurizing equipment must be such that 99 per cent. of all bacteria and pathogenic bacteria are killed in the milk treated therein at the temperature specifically provided for in the ordinance. A further section of the ordinance provides that pasteurized milk shall not contain more than 50,000 bacteria per c.c. from October to May, and not more than 1,000,000 from May to October.

61. **Bronchial Asthma.**—Koessler emphasizes the fact that there exists a form of bronchial asthma which is undoubtedly due to a diathetic allergy or anaphylaxis toward hen's egg. In most cases of bronchial asthma the causative factor lies in an allergic reactivity of the individual. The multiplicity of asthmatogenous substances is explained by the multiplicity of proteins, which may be split into anaphylatoxins.

Journal of Abnormal Psychology, Boston

January, VII, No. 5, pp. 313-384

67 Psychology in Medical Curriculum. A. Meyer, Baltimore.
68 Somatic Sources of Somatic Delusions. E. E. Southard, Boston.
69 Psychoanalysis and Society. T. Burrow, Baltimore.
70 Color Sense in Relation to Emotion of Sex. G. H. Taylor, Sydney.

Journal of Iowa State Medical Society, Clinton

January, II, No. 7, pp. 317-518

71 Ideals of Surgery. A. M. Pond, Dubuque.
72 Raynaud's Disease. A. L. Wright and O. C. Morrison, Carroll.
73 Postoperative Acute Dilatation of Stomach. C. E. Ruth, Des Moines.
74 Chronic Pancreatitis and Its Management. W. Jepson, Sioux City.
75 Hemorrhagic Diseases of New-Born. L. E. Kelley, Des Moines.
76 Echinococcus Cysts of Liver, with Report of Two Cases. E. J. Harnagel, Des Moines.

Journal of Maine Medical Association, Portland

January, III, No. 6, pp. 1127-1172

77 Eugenics. H. W. Miller, Augusta.
78 Insanity and Heredity. J. B. MacDonald, Hathorne, Mass.
79 Medico-Surgical Transition Period. H. F. Twitchell, Portland.

Laryngoscope, St. Louis

December, XVII, No. 12, pp. 1317-1395

80 Laryngectomy for Cancer. G. W. Crile, Cleveland.
81 Technic of Intranasal Operations on Lacrimal Apparatus. S. Yankauer, New York.
82 Transplantation of Piece of Cartilage Into Septum to Prevent Perforation After Submucous Resection. R. H. Brown, Chicago.
83 Nasal Septum. W. R. Butt, Philadelphia.
84 Vincent's Angina in Children. J. A. Mulholland, New York.
85 Large Papilloma of Epiglottis Removed by Fulguration. R. H. Johnston, Baltimore.
86 Relation of Diseases of Posterior Sinuses to Painful Conditions of Ear. J. H. Bryan, Washington, D. C.
87 Case of Afebrile Sinus Thrombosis and Cerebellar Abscess Complicating Acute Otitis Media in Adult. J. Auerbach, New York.
88 Vincent's Angina: Its Frequency and Importance of Its Recognition. T. H. Halsted, Syracuse, N. Y.
89 Relation of Diabetic Errors to Disturbances of Upper Respiratory Tract. E. W. Collins, Denver.

New York Medical Journal

January 11, XCVII, No. 2, pp. 57-108

90 Spasm of Pylorus and Congenital Pyloric Stenosis. H. Koplik, New York.
91 *Amebiasis and Results of Tests for Determination of Occult Blood in Feces. R. C. Rosenberger and T. C. Terrell, Philadelphia.
92 Newer Teachings of Diseases of Alimentary Canal. M. L. Knapp, New York.
93 Pernicious Anemia. G. W. McCaskey, Fort Wayne, Ind.
94 Crotalin in Treatment of Epilepsy and Nerve Disorders. J. B. Woodruff, Rochester, N. Y.
95 Instruction in Child Hygiene. M. S. Macy, New York.
96 Tuberculous Meningitis. S. Schaeffer, New York.
97 Vanadium Selenium in Cancer. F. von Oefele, New York.
98 Auscultatory Method of Blood-Pressure Readings. J. F. Prendergast, Philadelphia.

January 18, XCVII, No. 3, pp. 109-164

99 Superficial Metastatic Growths in Diagnosis of Deep-Seated Malignant Tumors. W. W. Babcock, Philadelphia.
100 Edema of Lids. G. W. Vandergrift, New York.
101 Bismuth Paste in Ear and Nose. G. M. Coates, Philadelphia.
102 An Hermaphrodite? W. S. Mills, New York.
103 Treatment of Pellagra. G. M. Niles, Atlanta, Ga.
104 Rhinology and Laryngology in General Practice. W. Ferguson, New York.
105 *Incipient Tuberculosis of Larynx. R. Pettit, New York.
106 Normal Human Blood-Serum in Treatment of Hemorrhagic Diseases of Infants and Children. J. E. Welch, New York.
107 Eyestrain in Children. F. W. Shipman, Richmond Hill, N. Y.
108 Origin of Medical Journalism. V. Greco, New York.

91. **Protozoa in Feces.**—There were 150 examinations made of 137 males and 146 examinations on 141 females by Rosenberger and Terrell. In the males the number of instances of ameba was 112. Cercomonas occurred in two cases and cercomonas with ameba in two. Among the females, eighty-one harbored ameba; cercomonas occurred forty-four times and cercomonas with ameba thirty-one times. Among the males, thirty-six were in the hospital under one year and were positive for ameba, while in eight who were inmates less than one year, no ameba was found. In sixty-six who were in the hospital over one year, ameba was present, and in twelve who were inmates more than one year no parasites were found. Among females, twenty-nine had ameba who were in the hospital under one year, and twenty-four were negative on being incarcerated less than one year. Ameba was present in fifty-two inmates over one year and absent in thirty-one over one year.

The method of examination consisted in simply taking a drop of the material, placing under a microscope, and examining under ordinary conditions, without a warm stage. The organism encountered corresponds to *Amœba coli*, as in no case examined was there a history of diarrhea or dysentery; the majority, if not all the patients, being subject to chronic constipation. While the parasites were found motile in quite a number of cases, yet encysted forms were most common. Apparently the parasites seemed to be more abundant during the warmer months than in the early spring; whether this really was the case or not is a matter of conjecture. In no case except one, was there a gross evidence in the stool of blood, and only in this case was there a suggestion of red cells being engulfed by ameba. A few stained preparations showed the peculiar picture of *Amœba coli*. In a number of cases from other wards of the hospital sixty-nine examinations were made. These specimens were not obtained by a special purge. Forty-one gave no evidence of intestinal parasites; twelve showed ameba; seven showed cercomonas, and seven were not examined for parasites on account of the unsuitable condition of the specimen. In fifty-two other examinations of thirty patients, nineteen contained ameba and twenty-five showed no parasites; seven showed cercomonas.

These studies were interesting in showing the great prevalence of ameba, especially where no history of diarrhea or dysentery or abscess of the liver was obtainable, and also as to the occurrence and persistence of the reactions for occult blood. Three tests for occult blood were used in most cases; these were the turpentine and guaiac test, benzidine, and a modified Meyer's reagent. A modification of Van Deen's test was also tried and was far superior to the common guaiac test and more reliable than benzidine. Among the females, of 141 cases, sixty gave a positive reaction to Meyer's reagent; forty-seven had positive reaction of turpentine and guaiac, and fifty gave a positive reaction with benzidine. In this group of 141, only two cases of hemorrhoids were obtainable and in this

group of the whole three tests 37 per cent. were positive. Individually, Meyer's reagent was positive in 42.5 per cent., turpentine and guaiac in 33.3 per cent., benzidine 35.4 per cent. In the males, of 122 tests, seventy-seven were positive to Meyer's reagent, or 66.2 per cent., while of 137 tested with turpentine and guaiac reagent sixty-two gave positive reaction, or 45.2 per cent. Grouping both reactions 53.7 per cent. gave positive evidence of the tests for occult blood. In this group of cases three instances of hemorrhoids occurred. In the sixty-nine cases examined in ordinary routine examinations, forty-six were negative to the tests for occult blood; ten cases gave a positive reaction with animal parasites, and thirteen gave a positive reaction for blood with no parasites. Among the insane patients in the females, there were forty-one cases negative for occult blood but showing ameba; forty cases were positive to occult blood and ameba, and twenty-five were positive for blood and negative for ameba. Among the males, forty-six cases were negative for occult blood but showed ameba; sixty-six were positive for occult blood and ameba; eleven were negative to ameba and occult blood, and fourteen were positive for blood and negative for ameba.

105. **Incipient Tuberculosis of Larynx.**—Pettit's method of treating tuberculosis of larynx which he says has healed from 70 to 85 per cent. of the cases in which it was applied, consists of submucous cauterization of the diseased tissues, with electricity. Cocainization should be thorough. The instrument is introduced cold, applied on the selected site, and enough current is turned on to produce a fairly bright cherry red, and pressure is applied until the tip of the electrode has sunk into the tissues to a depth corresponding to the vertical extent of the lesion. The application is continued until the whitened cauterized area has reached the apparently normal tissues; the current is then turned off, and the instrument quickly withdrawn, care being taken to avoid the posterior pharyngeal wall, epiglottis, and base of tongue, burns in which localities causing more subsequent pain and discomfort than the operation itself. Pettit cautions that the submucous cauterization should not be applied in all cases of beginning tuberculosis. Superficial ulcers on the posterior wall, particularly those on the cords, do better on the old method of lactic acid applications, but when the ulcer is situated on the surface of a tumor or on an infiltrate or where there is a tumor or infiltration or granulation without ulceration, there is found its field of usefulness and the results are eminently satisfactory. The only dangers of the method are the infliction of burns on structures extrinsic to the larynx, acute edema and perichondritis. Perichondritis or any severe inflammatory reaction of the larynx or epiglottis can be avoided by the observance of one or two cautions. The cautery should not be too hot; a white heat is dangerous. The puncture should not be too deep, nor should more than two separate punctures be made at one sitting. The immediate neighborhood of the cricoarytenoid joint should also be treated with great respect; penetration of the capsule of this joint is liable to be followed by a most intense inflammatory reaction with exfoliation of the arytenoid cartilage. The operation is of questionable value, if not contraindicated, in the case of weak, nervous, irritible individuals in whom advanced pulmonary lesions are present; or when the patients are poorly nourished, suffering from digestive disturbance and lack of appetite. A mild intermittent fever is not a contraindication; in the presence, however, of a continuous or of a septic febrile movement the operation should not be performed. Following the operation the patient should be put upon a fluid diet, preferably milk; if, however, milk is not well borne, albumin water, cold broths, and soups, without pepper or salt, may be substituted. Rest for the larynx is important, and if possible the patient should be made to communicate his wants entirely by writing. On the first and second day, insufflations of morphin and an antiseptic powder of equal parts may be given, and by the third or fourth day the antiseptic powder alone is sufficient. In about a week, or when the slough has separated, instillations of menthol in oil in 2 or 3 per cent. solution should be made; this loosens and aids in expelling the secretions from the wounded surface and also has an analgesic effect upon the same. Small doses of creosote or guaiacol carbonate are also useful at this time. Tonics and the general treatment of tuberculosis must not be neglected. In the event of great shrinkage of the tumor or infiltrate, but not its complete reduction, the operation may be repeated within two or three months. But such cases are rare, says Pettit, and in the vast majority of patients, submucous cauterization of a tuberculous infiltration, tumor, or granulation in the manner above described, is followed by a speedy disappearance of the same and generally by a complete restoration of the normal functions of the larynx.

Southern Medical Journal, Nashville, Tenn.

January, VI, No. 1, pp. 1-72

109 *Some Economic Questions Related to Syphilis. I. Dyer, New Orleans.
110 Syphilis of Eye. D. Roy, Atlanta, Ga.
111 Syphilis of Ear. N. M. Heggie, Jacksonville, Fla.
112 Syphilis of Nose and Throat. H. H. Martin, Savannah, Ga.
113 Gumma of Urethra; Report of Two Cases. W. P. Dey and J. L. Kirby-Smith, Jacksonville, Fla.
114 Importance of Recognition of Syphilis in Circulatory Disease. J. T. Halsey, New Orleans.
115 Effect of Anti-Syphilitic Remedies on Wassermann Reaction. W. Litterer, Nashville, Tenn.
116 Hygiene of Syphilis. O. Dowling, New Orleans.
117 *Typhus Fever, with Report of Cases. J. E. Paullin, Atlanta, Ga.
118 *Treatment of Arteriosclerosis by Physiologic Methods. J. M. Swan, Rochester, N. Y.
119 Obstructions in Urethra and Their Removal. A. G. Douglas, Birmingham, Ala.
120 Typhoid: Diet and Treatment. J. G. Wilkinson, Ragland, Ark.
121 Dietetic Treatment of Enteritis in Infants. W. M. Salter, Repton, Ala.

109. Abstracted in THE JOURNAL, Dec. 7, 1912, p. 2090.

117. **Typhus Fever.**—Paullin summarizes the features of his six cases as follows: Onset has been sudden, with chills as a rule; intense aching pain in back, persistent headache, in two cases severely distressing to the patient, and remaining throughout the course of the disease; delirium was present in one case; prostration has been quite marked in all of the cases. The eyes are generally bright and shiny, the face flushed, tongue heavily coated; between the fifth and eighth day of the disease the characteristic eruption appears first on the chest and abdomen, rapidly spreading to the back, arms, forearms, hands, neck, face, legs and feet; although it is stated that frequently it is absent from the face. The rash resembles somewhat the typhoid roseola, it is more extensive and of a brighter color, masculopapular, varying in size from 1 to 12 mm. in diameter, appearing rapidly over the body, becoming petechial in places and not completely disappearing under pressure. In these cases the rash has completely disappeared before the subsidence of the fever, leaving behind a darkish brown discoloration which soon disappears. The rash has not been observed on the buccal mucosa. No particular flushing has been noted in these cases.

The temperature is high from the onset and having within the first few days reached its fastigium maintains this with very slight remission for ten to fifteen days, when it ends by lysis or crisis. With a normal temperature the patients feel well and headache disappears. The pulse, as a rule, is full, good volume, occasionally dicrotic; slow in comparison with the heighth of fever. The spleen has been palpable at the first examination in all of the cases except one, the percussion area of splenic dulness is here increased. The border is hard and firm. The largest spleen extended 3.0 cm. below the costal margin. All the cases have shown a slight leukocytosis, the highest count 12,400, the lowest 8,000. Repeated Widals with the *B. typhosus* and *B. paratyphosus* have been negative. Blood cultures have been made on all cases except the first two; all remaining sterile. Most patients have had a slight bronchitis at the beginning of the disease and in two it persisted throughout its course. There have been no relapses in these cases and no complications. Treatment has been symptomatic; no specific is at present known for the disease.

118. Abstracted in THE JOURNAL, May 11, 1912, p. 1474.

United States Naval Medical Bulletin, Washington, D. C.

October, VI, No. 4, pp. 473-654

122 Recent Hospital Construction in United States Navy. A. W. Dunbar, U. S. Navy.
123 Few General Principles of Hospital Construction. F. W. Southworth, U. S. Navy.

124 Ventilation of War Vessels. R. H. Robinson, U. S. Navy.
125 Plans and Description of Hospital Ship for United States Navy. E. M. Blackwell, U. S. Navy.
126 Prevalence of Frambesia (Yaws) in Guam and Its Connection with Etiology of Gangosa. W. M. Kerr, U. S. Navy.
127 Nitrous Oxid-Oxygen Anesthesia. H. F. Strine and R. B. Duncan, U. S. Navy.
128 Eight Hundred and Twenty Complement-Fixation Tests on 461 Patients; Modified Emery Technic. E. P. Huff, U. S. Navy.
129 Diagnosis and Dosage in Uncinariasis in Navy. J. F. Leys, U. S. Navy.
130 Character and Genesis of Thermic Myospasms, with Observations on Myalgia Thermica. W. L. Mann, U. S. Navy.

West Virginia Medical Journal, Wheeling

January, VII, No. 7, pp. 219-254

131 Management of Cardiorenal Cases Exhibiting High Blood-Pressure. L. Litchfield, Pittsburgh.
132 Cholelithiasis and Pancreatitis; Their Surgical Treatment. J. K. Oates, Martinsburg.
133 Importance of Early Recognition of Cancer, or Cancerous Lesions. W. Neill, Charles Town.
134 Hemorrhage of New-Born Infant. S. G. Moore, Elkins.
135 Treatment of Non-United Fractures. R. H. Dunn, Huntington.
136 Whooping-Cough; Its Nature and Prevention. W. C. Rucker.
137 Spontaneous Cure of Malignant Disease. A. Marcy, Riverton, N. J.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

December, VI, No. 4, pp. 445-503

1 *Resistance of Cimex Lectularius to Various Reagents, Powders, Liquids and Gases. P. Blacklock.
2 Resistance of Ornithodorus Moubata to Various Sheep-Dips. B. Blacklock.
3 Three New African Species of Genus Tabanus. H. F. Carter.
4 *Hemoglobin Metabolism in Malaria. H. Influence of Quinin. G. C. Simpson and E. S. Edie.
5 Cultivation of One Generation of Malaria Parasites (Plasmodium Falciparum) in Vitro by Bass' Method. J. G. Thomson and S. W. McLellan.
6 Sex of Mosquito Larvae. H. A. Adie.
7 Some Effects of Occurrence of Myxosporidia in Gall-Bladder of Fishes. H. B. Fantham and A. Porter.
8 Trypanosomes of Game and Domestic Stock in Northeastern Rhodesia. A. Kinghorn and W. Yorke.
9 Development of Trypanosoma Rhodesiense in Glossina Morsitans. A. Kinghorn, W. Yorke and L. Lloyd.

1. **Resistance of Cimex Lectularius.**—The results of Blacklock's experiments have shown that the bedbug whether in the larval or adult stage is not readily killed by depriving it of human blood. It may thus remain alive and active for months in houses which have ceased to be inhabited. Houses on being reoccupied after being empty for months may still be found infested with bugs. Bedbugs may transmit certain diseases from one human being to another. Therefore it is inadvisable that bugs and human beings should occupy the same house. Human beings must be protected from the attacks of bedbugs. There is no evidence that bedbugs can be cleared out of a house by insecticide powders. Experiments suggest that powders are of very limited utility. The same applies to liquid remedies. Gaseous substances present the best prospect of success. Of such substances, sulphur dioxid is cheap and effective. Sulphur dioxid gas under pressure for two minutes, kills with certainty all stages in the cycle of development of the bug, including the egg.

4. **Hemoglobin Metabolism in Malaria.**—Increased excretion of urobilin, according to the authors, may occur after the administration of quinin in doses of 10 to 30 grains a day. A similar result follows injection of blood pigment or hemolytic drugs. Quinin probably possesses the power of determining hemolysis in the body, though the exact mechanism of its action must be further investigated. Individual or pathologic idiosyncrasy may exaggerate this action and so account for the influence of quinin in blackwater fever.

Bristol Medico-Chirurgical Journal, London

December, XXX, No. 118, pp. 289-389

10 Some Diseases Bearing Names of Saints. R. Fletcher.
11 Problem of Medical Education. W. C. Swayne.
12 Barber Surgeons. G. Parker.
13 Tuberculin and Immunity. J. W. Taylor.
14 The Bristol Medical Library. C. K. Rudge.

British Journal of Children's Diseases, London

December, IX, No. 108, pp. 529-597

15 Case of Precocious Development in Boy Aged Six Years. E. C. Williams.
16 *Cutaneous Reaction to Tuberculin in Childhood. C. P. Lapage.
17 Case of Interstitial Keratitis. J. Allan.

16. **Reaction to Tuberculin in Childhood.**—The reaction to tuberculin is regarded by Lapage as being specific, and it is a broad rule that all cases infected with tuberculosis give a reaction. The subcutaneous method gives the highest percentage of results, but for practical purposes the cutaneous method is the most suitable. Human tuberculin should be used because bovine tuberculin does not give reactions in all cases. The substances used to dilute the tuberculin do not in themselves cause a reaction in the strengths they are now used. The nature of the reaction is not yet proved. The results of the clinical examination and the tuberculin test are confirmatory of one another, the reaction occurring far more frequently in those showing symptoms pointing to tuberculous infection. The roentgenographic examination and the cutaneous tuberculin test correspond fairly closely if their results are properly interpreted. A reaction indicates that the subject has been infected with tuberculosis and does not mean that the disease is progressive or even active. There is at present no method of performing the test to afford a means of distinguishing between active and passive disease, but research may find such a method. A marked reaction or a reaction in a healthy person may be of good import and need not bear a sinister interpretation. Slight reactions seem to occur more often in cases negative or only possible clinically.

A negative result may follow the test in children infected with tuberculosis: (1) if the disease is advanced; (2) if there is cachexia; (3) in very acute disease; (4) in mixed infections or cases complicated by acute disease.

A single negative test does not exclude tuberculous infection, repetition of the test increasing the percentage of positive results considerably (28 per cent.). Even a negative result on repetition of the test does not always exclude infection, because some cases are only positive on the third application and others positive to Roentgen-ray examination, but cases neither advanced nor cachectic in nature do not react to repeated tests. Therefore, judged by the Roentgen-ray examination, the cutaneous tuberculin test cannot be regarded as absolutely reliable in excluding tuberculous infection. In some cases the first test may stir up powers which have not given a reaction at the first test, but which produce a reaction at the second test. With the exceptions noted above, and excluding faulty technic, a negative result to the test applied twice can for all practical purposes be held to mean that there has been no infection with tuberculosis. There is greater difficulty in diagnosing occult tuberculosis after the age of two years. In indicating tuberculous illness the test is of greatest value in young children. As judged by the cutaneous test on children attending at a hospital, tuberculous infection occurs in 32 per cent. up to the age of 2 years, in 51.2 per cent. from 2-5 years, in 60 per cent. from 5-10 years and in 60.8 per cent. from 10-14 years. Even in cases negative to clinical examination, infection occurs in 14.7 per cent. up to the age of two years, in 31.4 per cent. aged from 2-5 years, in 30.7 per cent. aged from 5-10 years and in 51.2 per cent. aged from 10-14 years. In other words tuberculous infection is common in early life, increases rapidly in frequency up to the age of ten years, and then increases steadily but less rapidly, until at the end of school age at least 60 per cent. of children have become infected. Even in cases negative to clinical examination about 50 per cent. have become infected.

British Medical Journal, London

January 4, I, No. 2774, pp. 1-52

18 Insect Porters of Bacterial Infections. C. J. Martin.
19 Gall-Stones. B. Moynihan.
20 Introductory to Advanced Course on Tuberculosis. S. Delepine.
21 Cult of Iodin and Dread of Skin. J. L. Thomas.
22 Aberrant and Recurrent Osteomyelitis. R. C. McGuire.
23 Primary Sarcoma of Both Biceps Muscles. E. Scott-Carmichael.
24 Cocain Poisoning. C. Rose.
25 Experiment to Illustrate Effect of Size of Population on Rate of Selection of New Bacterial Races. W. J. Penfold.

Edinburgh Medical Journal

January, X, No. 1, pp. 1-96

26 Direct Laryngoscopy, Tracheo-Bronchoscopy and Esophagoscopy. A. L. Turner and J. S. Fraser.

27 Function of Royal Medical Society in Medical Education. R. Hutchison.
28 Primary Cancer of Vermiform Appendix; Report of Six Cases. J. M. Graham.
29 Tumor Formation and Allied Pathologic Processes. A. J. Brock.
30 *Incontinence of Urine in Children. J. W. Simpson.

30. **Incontinence of Urine in Children.**—For the purpose of treatment the composition of the urine is divided by Simpson into the following groups: 1. In some cases the urine presents no abnormal features. This "normal" condition is often seen in a case of incontinence following some debilitating illness which has reduced the strength of the patient. 2. The urine is found extremely acid, loaded with urates, of high specific gravity and often diminished in quantity. 3. The urine is found to be neutral or alkaline, usually of low specific gravity, often containing triple phosphates, sometimes also a few pus cells with a trace of albumen, frequently much increased in quantity. 4. Urine may contain bacilli. In Group I (normal urine cases) the treatment consists in giving a tonic to try and improve the general condition of the child. When this has been improved the administration of belladonna should be begun. In giving belladonna, Simpson usually begins with 10 minims of the tincture two or three times a day, and gradually increases the doses up to 20 to 25 minims. He has never given larger doses of belladonna, but he has used approximately larger doses of atropin. Even with the smaller doses of belladonna the child may complain of difficulty in seeing, dry mouth, etc., and when such is the case one must proceed carefully before increasing the dose. Simpson has, however, never had very much trouble in using belladonna, but once or twice with atropin he has seen well-marked symptoms of poisoning. With the great majority of patients he does not prescribe beyond 15 minims thrice daily, but says it is advisable to continue this for a considerable period.

Group II—(Urine extremely acid, etc.).—Here one must first reduce the acidity of the urine, and this is most easily accomplished by the use of citrate of potash in doses of 10 grains thrice daily; even larger doses may be required. When the acidity has been reduced, the belladonna should be begun. If the child's general health is not very good, 2 or 3 minims of liquor strychnin added to the prescription is often beneficial. It is inadvisable to give meat when the child is suffering from this "acid" condition. Group III—(Alkaline urine, etc.).—In these cases dieting is of the first importance, all carbohydrate food as far as possible being prohibited. If the urine is very alkaline, acid sodium phosphate may be given; when the alkalinity of the urine has been reduced belladonna should be used in the manner stated above.

Group IV—(Bacilli in urine).—A pure culture of *B. coli* is frequently obtained in such cases. If the urine is very acid it is wise at first to reduce the acidity by giving citrate of potash, then urotropin in 5 to 10-grain doses thrice daily often proves of immediate benefit. If there is mixed infection salol is often more efficacious. Mixed infection cases are often very troublesome, however, and a vaccine may sometimes be used with great advantage. In the treatment of enuresis Simpson has tried a large number of other drugs, such as ergot, antipyrin, epinephrin, thyroid, etc., but he has rarely seen any good results follow after belladonna has been used unsuccessfully. Ergot, however, he says, ought to be tried if belladonna fails. Simpson has used thyroid frequently, but the results obtained have been disappointing. He would, however, always try in those cases in which the child is markedly backward mentally. He has never felt warranted in using the huge doses sometimes recommended (15 grains in the day), his maximum dose being 5 grains daily. If the child is highly nervous and suffers from disturbed sleep, night terrors, etc., the addition of 5 to 10 grains potassium bromid given with the last dose at night of belladonna often does good.

Glasgow Medical Journal

January, LXXIX, No. 1, pp. 1-79

31 Ovum in Relation to Sterility and Abortion. J. Lindsay.
32 Lesions of Bilharzial Disease. A. R. Ferguson.
33 Three Cases of Pancreatitis with Two Recoveries. A. MacLennan.

Lancet, London

January 4, 1, No. 4662, pp. 1-80

34 Insect Porters (Carriers) of Bacterial Infection. C. J. Martin.
35 *Recovery from Infective Endocarditis (Streptococcal). H. Hemsted.
36 Rupture of Spleen and Liver; Operation; Recovery. W. H. Evans.
37 *Glycosuria in Tuberculous Meningitis. R. S. Frew and A. E. Garrod.
38 Removal Through Mouth of Tooth-Plate Impacted in Esophagus for Two and a Half Years. S. Thomson.
39 *Treatment of Pulmonary Tuberculosis with Small Doses of Tuberculin. N. D. Bardswell.
40 *Value of Complement Fixation Test in Tuberculosis. L. S. Dudgeon, W. O. Meek and H. B. Weir.
41 Radical Operation for Malignant Disease of Testis. S. Pringle.
42 Case of Diphtheritic Enteritis. H. M. Cargin.
43 Facial Wrinkles and Emotional Grimace. W. A. Hollis.

35. **Infective Endocarditis (Streptococcal.)**—In Hemsted's case, a young married woman of 21, the subject of a congenital lesion of the endocardium, became infected from a tooth abscess. Ulceration of the mural endocardium resulted in innumerable infarcts in the lungs and a few in other tissues. Streptococci were isolated on several occasions from the blood-stream, and the patient, after being ill for nearly a year, has completely recovered. She was treated with autogenous vaccines and autogenous serum. In the early stages scattered pulmonary infarcts produced a picture closely simulating acute tuberculosis pleuritis.

37. **Glycosuria in Tuberculous Meningitis.**—The authors examined forty-one cases of tuberculous meningitis. In all but three of the cases the diagnosis of tuberculous meningitis was confirmed by post-mortem examination. The remaining three cases presented the characteristic symptoms of the disease, and in each of them the tubercle bacillus was found in the cerebrospinal fluid. In fifteen of the forty-one cases (36.6 per cent.) glucose was found in the urine at some period in such quantity that when equal volumes of urine and Fehling's solution were mixed when hot, but without reboiling, conspicuous reduction occurred. In the earlier cases examined an osazone, with the appearance and melting-point of glucosazone, was obtained, the urine was found to be dextro-rotary, and estimations of the glucose yielded figures between 0.25 and 1 per cent. In eleven of the remaining twenty-six cases partial reduction of the hot Fehling's solution was obtained without reboiling and this at the same period of the disease at which pronounced glycosuria appeared in the other fifteen cases. In the remaining fifteen cases of the series no reduction of Fehling's solution was obtained at any time. In each case daily or more frequent examinations were made, from the time when the diagnosis of tuberculous meningitis was made until the death of the patient, and as regards the period of onset of glycosuria the results were as follows: In two cases sugar was first found in the urine twenty-four hours before death; in ten cases forty-eight hours before death; in one case seventy-two hours; and in one case ninety-six hours. One patient developed glycosuria nine days before death, and this was, unfortunately, the only case of the glycosuria series in which no necropsy was allowed. Once developed the glycosuria persisted for the remaining days of the patients' lives, and it will be seen that in the great majority of instances the sugar only appeared in the two last days of life.

In their clinical features the glycosuria cases presented no striking differences from those in which no sugar appeared in the urine, nor was there any obvious influence of sex or age in this respect. As far as could be judged the liability to glycosuria is not greater at one age than at another. Of twelve patients with glycosuria, seven had optic neuritis and five had none; whereas among thirteen without glycosuria the proportion was eight with to five without. Certain other clinical features, such as the duration of the illness, the degree of fever and depth of unconsciousness, appeared to be equally without influence on the development of glycosuria. The organs which play recognized parts in the causation of glycosuria were examined with special care. In no instance did naked-eye or microscopic examination of the pancreas show any morbid changes in that gland to which the occurrence of the glycosuria could be ascribed. The same may be said of the thyroid and adrenal glands. In some cases miliary tubercles were present in them, but this was equally true of cases in

which no sugar was excreted and of the glycosuric cases. The characters and distribution of the tuberculous lesions elsewhere than in the meninges differed in different cases, but as far as could be judged the differences of distribution bore no obvious relationship to the presence or absence of glycosuria. In a number of fatal cases of tuberculosis without meningitis, in which the urine was examined during the last days of life, no sugar was ever found. It seems highly probable to the authors that the presence of the meningitis is the factor which determines the occurrence of glycosuria.

39. **Tuberculin in Tuberculosis.**—The dosage of tuberculin given by Bardswell to his patients was never outside the limits of 1/1,000 to 1/600 milligram, T. R. being the preparation used in every instance. Thirty patients in all were treated, over periods varying from a minimum of six weeks to a maximum of twenty-five weeks. Thirteen of these cases had less than six inoculations. The remaining seventeen cases were patients with well-marked lung disease. The cases were for the most part of an unfavorable type clinically. In the case of all the patients thus treated the injection of the small dose of tuberculin nearly invariably resulted in a satisfactory immunizing response, as shown by the rise in the opsonic index. The repeated immunizing responses were not, however, associated with any appreciable alteration in the clinical condition, in respect to such essential factors as reduction of temperature, diminution in the amount of sputum, disappearance of tubercle bacilli, etc. In fact, Bardswell was unable to detect any difference whatever in the progress of the tuberculin-treated patients as compared with the progress of similar types of patients who, living under precisely similar conditions, were not having tuberculin. It is of some interest to note that in no case did the weekly repetition of the small doses of tuberculin give rise to any hypersensitiveness.

Considering only the seventeen patients whose treatment extended over periods ranging from a minimum of seven weeks to a maximum of twenty-five weeks, the results are as follows: Of twelve cases of moderately advanced disease after a period of five years since discharge, four, or 33 per cent. are well and the remainder are dead. Of those who have died, two lived for over four years, three lived for over three years, two lived for over one year and one lived three months only after discharge. Two of the four patients who are well lost their bacilli before they left the sanatorium. The five cases of very advanced disease all died within twelve months of their discharge. The conclusion Bardswell arrives at is that the tuberculin, from a clinical point of view, was a negligible factor, and in no wise influenced either the immediate or the ultimate prospects of the patients to whom it was given.

40. **Complement Fixation Test in Tuberculosis.**—The authors show that in cases undergoing treatment other than by tuberculin injections the reaction was positive in about 84 per cent. of cases; in every case in which the patient was under treatment with tuberculin the reaction was positive; in fourteen out of nineteen cases of "arrest," in which the disease had been quiescent for periods varying from a few months to seven years, the reaction was positive (73 per cent.) Of the 109 cases of pulmonary tuberculosis in which a positive reaction was obtained, fifty-six gave a "strong" reaction, twenty-eight, a "medium," and twenty-five a "weak" reaction. In cases of tuberculosis other than pulmonary, mostly cases of so-called "surgical" tuberculosis, the reaction was positive in 57 per cent. of cases, while the blood of presumably healthy "contacts" gave in every case a negative reaction. Extended investigations on the effect of treatment on the reaction are promised in the near future.

Annales de Gynécologie et d'Obstétrique, Paris

December, XXXIX, No. 12, pp. 705-764

44 *Eugenics. (De l'eugennétique.) A. Pinard.
45 *Serotherapy of Uncontrollable Vomiting of Pregnancy. G. Fieux.
46 Operative Treatment of Malformations of the Uterus. P. E. Goullioud. Commenced in No. 11.

44. **Eugenics.**—Pinard says that he has been told that it is immoral and bad form to discuss the function of reproduction with young men and women, even to educate them in the necessity for improving the race in their offspring instead of helping to deteriorate it. He replies to such protests that it is the highest form of morality to ensure the conservation and the amelioration of the human race. Young procreators already have applied foresight to the instinct of reproduction to the extent that they have voluntarily limited the number of births. It is but a step farther to ensure conditions for the births which will bring the offspring above the average. Pinard adds that his long experience as an obstetrician has convinced him that the ignorance of the procreators is the principal cause of the birth of degenerates. The practice of eugenics will ensure a more fortunate, or at least a less unfortunate, race than is living now; the future of the race depends on conditions before procreation.

45. **Serotherapy of Uncontrollable Vomiting of Pregnancy.**—Fieux adds two more to the two cases he has previously reported in which conditions rapidly improved under subcutaneous injection of normal human serum, horse-serum or serum from another pregnant woman. The serum from the pregnant woman seemed most effectual, but in every instance the condition began to improve at once under the serotherapy. Serum from a pregnant woman probably contains antibodies explaining its favorable action, but the cause of the action of the "paraspecific serotherapy," the horse-serum, is still a mystery. In one of the cases the vomiting in a previous pregnancy had been uncontrollable likewise, compelling induction of abortion. In the second pregnancy the vomiting commenced in the second month and soon entailed extreme prostration with headache, insomnia and 5 per thousand acetone in the urine, and rapid respiration. After injection of 2 c.c. of horse-serum the amount vomited dropped from 900 c.c. to 400, 300 and 200 c.c. in the three following days, but the pulse increased to 100 and the output of urine dropped to 200 c.c. The vomiting then resumed its former severity, and the fourth evening 15 c.c. of serum from another woman, three months pregnant, was injected. The following night the patient was very restless and dyspneic, and the next day the prostration was extreme, the temperature 37.8 C. But thirty-six hours after the injection of serum a sudden change for the better was observed and rapid recuperation followed. Three weeks later, as there was a little morning nausea, an additional injection of 15 c.c. of horse-serum was given, after which there was no further trouble. In another case the woman began to vomit before the end of the first month and vomited up to fifty-seven times a day. The pulse soon ran up to between 104 and 110, and the prostration was so intense that she was given oxygen to inhale. Under injection of 20 and 15 c.c. of horse-serum, with an interval of two days, the vomiting was arrested.

Presse Médicale, Paris

December 21, XX, No. 105, pp. 1061-1072

47 Diagnosis of Acidosis. M. Labbé and H. Bith.
48 Infection from Oysters. (Les infections d'origine ostréaire.) L. Lagane.
49 Weakness of the Heart-Beat. (Le syndrome hyposphyxique.) A. Martinet.

December 25, No. 106, pp. 1073-1080

50 Technic for Avoiding Operative Pneumothorax. (Un nouveau genre d'appareils à baronarcose.) R. Danis.

Revue Mens. de Gynécologie, d'Obst. et de Pédiatrie, Paris

December, VII, No. 12, pp. 689-760

51 *Citric Acid to Check Coagulation in Puerperal Phlebitis. P. Guéniot.
52 Low Implantation of the Placenta: Six Cases. G. Baux.

51. **Citric Acid in Prophylaxis of Puerperal Thrombosis.**—Guéniot cites the case reported by Chantemesse in 1908 in which thrombosis was induced by too long administration of calcium chlorid to control multiple intestinal hemorrhage in typhoid fever. When signs of phlebitis developed he gave citric acid, and under its influence the phlebitis disappeared, but the blood became so fluid that the hemorrhages started again. Guéniot has found that women with uterine fibromas frequently had the blood coagulability increased by one-third, but under small doses of citric acid the patients recovered after removal of the fibromas; with no signs of postoperative phlebitis. He reports here in detail the case of a young woman with signs of mild puerperal phlebitis, to whom he administered 12 gm. of citric acid on each of the two following days, with the con-

sequence that the phlebitis was arrested and all signs of it gradually subsided. Guéniot agrees with Chantemesse that administration of citric acid may prevent the spread of phlebitis, but that at the same time it exposes the patient to accidents from too rapid disintegration of the clots. The subject needs further study, especially comparison of the coagulability of the blood before, during and after the citric acid is given.

Berliner klinische Wochenschrift

December 23, XLIX, No. 52, pp. 2½1-2½80

53 *Criminal Abortion. L. v. Lingen.
54 Chemical Action of Thorium X on Uric Acid and Other Organic Substances. W. Falta and L. Zehner.
55 Thorium X in Treatment of Pernicious Anemia. E. Prado-Tagle.
56 Treatment of Psychoneuroses. R. Friedlaender and H. Vogt.
57 *Paraldehyd Poisoning. (Fall von Paraldehydvergiftung und seine Behandlung.) L. Fornaca and G. Querelli.
58 Inheritance of "Acquired Properties." (Das Problem der Vererbung "erworbener Eigenschaften.") R. Meyer.
59 Operative Treatment of Chronic Obstipation. F. Karewski. Commenced in No. 51.

53. **Criminal Abortion.**—Lingen remarks that in Russia as well as elsewhere the number of criminal abortions is constantly increasing. In his service (St. Petersburg) it has tripled in a few years, and is ten times as large as in 1894. In August, 1911, there were 123 cases of abortion, the curet being applied in eleven cases in one day. The deaths from following sepsis amounted to 1.7 per cent. of 899 cases last year, a small proportion in comparison with Winter's 16 per cent., in eighty cases of operative septic abortion, and Koblanck's seven deaths in forty treated expectantly and twenty-nine deaths in 121 operative cases. He discusses the diagnosis and treatment, but adds that he knows of no way and means to stem this tide of criminal abortions. Experience has shown that legislation, no matter how strict, is unable to control it. Only the enlightenment of the public in regard to the dangers of criminal abortion can improve conditions, and this task belongs first and foremost to medical men.

57. **Paraldehyd Poisoning.**—A physician of 48 was healthy until 32, when a fracture of the right parietal bone healed, leaving a tendency to intractable insomnia. He used various sedatives, until finally he was taking 5 gm. of veronal a day for five years, and then at 42 he changed to paraldehyd, increasing from 2 gm. a day to 12 and 15 in the course of five years. Then symptoms developed strongly resembling those of chronic alcoholism, and finally, after taking 500 gm. in the course of one week, there was an attack of delirium tremens with one epileptic seizure. The delirium reached its height in four days, the temperature was high, the pulse weak and rapid and the patient perspired copiously. Then under the influence of opium, improvement began, and by the ninth day the patient seemed physically and mentally absolutely normal, except that there is still persisting insomnia, and there is a little doubt as to completely normal cerebration. The case teaches that even very large doses of paraldehyd, causing severe intoxication, may yet be eliminated so completely that little damage results, although the outcome might not be so favorable in individuals with intestinal disturbance. Besides delirium, motor excitement, involuntary defecation and micturition, intense diaphoresis and rise in temperature, abnormal polyuria and intense thirst seemed to be features of the paraldehyd poisoning.

Correspondenz-Blatt für Schweizer Aerzte, Basel

December 20, XLII, No. 36, pp. 1353-1384

60 Progress in Grinding Spectacles. (Brillenkunde.) C. A. Hegner.
61 Case of Gangrenous Balanitis. Tièche.
62 The Psychic Factor in Whooping-Cough. (Einige Beobachtungen über das psychogene Moment beim Keuchhusten.) E. Oberholzer.

Deutsche medizinische Wochenschrift, Berlin

December 19, XXXVIII, No. 51, pp. 2393-2450

63 *Typhoid in Rabbits. (Versuche, Kaninchen zu Typhusbazillenträgern zu machen und sie therapeutisch zu beeinflussen.) P. Uhlenhuth and T. Messerschmidt.
64 *Diagnostic Importance of the Bone Reflexes. (Knochenreflexe.) H. Bickel.
65 *Restricting Intake of Fluids in Bronchitis. (Durstkuren bei chronischen Bronchialerkrankungen.) G. Singer.
66 Joint Disease. (Zur Pathologie und Therapie der Gelenkerkrankungen.) E. Plate
67 Tuberculous Origin of Disturbances in Menstruation. (Menstruationsstörungen.) J. Hollos.
68 *Tardy Empyema of the Mastoid Process. (Spätempyeme des Warzenfortsatzes.) C. Lüders.
69 *Hydrochloric Acid in Treatment of Pernicious Anemia. (Die Salzsäurebehandlung der perniziösen Anämie.) A. C. Croftan.
70 Absorption of Sodium Salicylate. (Untersuchungen über die Resorption von Natron salicylicum bei verschiedenen Applikationsweisen.) E. Levin.
71 Defective Rubber Gloves. (Löcher im Gummihandschuh.) C. Credé-Hörder.

December 26, No. 52, pp. 2½1-2½72

72 *Impairment of the Memory and Its Treatment. (Die Gedächtnisschwäche—Mnemasthenie.) P. Ranschburg. Commenced in No. 51.
73 Tuberculin Treatment of Tuberculosis. (Probleme der spezifischen Tuberkulose-Behandlung.) E. Levy.
74 The Protective Ferments. (Einige Untersuchungsergebnisse und klinische Ausblicke auf Grund der Abderhaldenschen Anschauungen und Methodik.) A. Fauser.
75 General Infection from Pyocyaneus Bacillus. C. Kleineberger.
76 Hypersusceptibility to Arsenic. (Beobachtungen über Arsenüberempfindlichkeit.) C. Staeubli.
77 Leukocyte Inclusions. (Diagnostische Bedeutung der Döhleschen Leukozyteneinschlüsse.) A. Belak.
78 Operation for Extensive Hare-Lip. (Zur Operation sehr grosser, mit kompletter Kieferspalte einhergehender Hasenscharten.) W. Neumann.
79 Serodiagnosis of Syphilis. (Weitere Erfahrungen mit Azetonextrakten bei der Serumdiagnostik der Syphilis.) F. Munk.

63. **Rabbits as Chronic Typhoid-Bacillus Carriers.**—Uhlenhuth and Messerschmidt found it possible to make rabbits chronic carriers by inoculating them in the gall-bladder with typhoid bacilli. The longest duration of the carrier stage was six months. The inflammatory changes in the gall-bladder, the course of the cases and the negative results of attempts to immunize the rabbits—all were similar to what is observed in man. The inoculation of tubercle bacilli in the gall-bladder sometimes induced a fatal syndrome resembling human typhoid fever in every particular. The positive outcome of the experiments supplies a basis for future research on the cure of typhoid by medicinal means.

64. **Bone Reflexes.**—Bickel has been in a position to make a systematic and comprehensive study of the bone reflexes in over 200 patients with disease of the nervous system. He found that what he calls the radius-periosteum reflex is the only bone-reflex phenomenon which occurs as regularly as the knee-jerk and Achilles tendon reflex. The absence of the radius reflex or a difference on the two sides was almost invariably a sure sign of pathologic conditions, as determined by the course of the case. He elicits the reflex with the Traube hammer, grasping the patient's hand so as to hold the arm in adduction and slight pronation, flexed at the elbow at an angle of 100 or 120 degrees. The patient can stand or be seated, except that in dubious cases he must recline so that the forearm can lie relaxed on the abdomen. The blow is struck on the lower third of the radius shaft or possibly on the styloid process of the radius. The forearm becomes flexed, generally accompanied by slight pronation; in exceptional cases the reflex movement is merely the pronation alone. This radius reflex can be readily elicited in the healthy, particularly when they are reclining. Bickel regards it as almost the equivalent—for the arm—of the knee-jerk and Achilles for the leg. None of the other bone reflexes can be compared with it for regularity or reliability. A peculiar feature of the bone reflexes is that the reflex movement may occur on both sides when only one side is tapped, or it may occur on the opposite side alone. In two cases of tumor of the brain he found the bone reflexes exaggerated on the sound side. The bone reflexes sometimes give a positive response when the tendon reflexes are negative. If it is difficult to decide whether a slight paresis of one arm is the work of some peripheral neuritic process or of some minute cerebral focal trouble on an arteriosclerotic basis, and the nerve trunks in both arms are equally tender to pressure and the triceps reflex shows no difference on the two sides, the discovery of exaggeration of the radius or ulna reflex on the paretic side would sustain the diagnosis of some cerebral focal trouble. In one case of incipient syringomyelia he found the triceps reflex on one side merely attenuated, while the radius and ulna reflexes on this side were already abolished. With other affections of the nervous system, especially incipient multiple sclerosis, the bone reflexes may warn of organic trouble earlier and more decidedly than the tendon reflexes. When the bone and tendon reflexes gave contradictory findings

it always proved to be merely that one had outraced the other. It is unnecessary to study the bone reflexes in the legs, as the tendon and plantar reflexes are all that can be desired.

65. **Restriction of Fluids in Treatment of Chronic Bronchitis.**—Singer relates the details of nine typical cases to demonstrate the remarkable benefit liable to follow systematic restriction of the intake of fluids, "thirst cures." The principle is the same as that of Oertel's and Karell's methods of treating plethora, dropsy and failing compensation, by restricting the diet and especially the ingestion of fluids. Physicians are too inclined to overlook regulation of the intake of fluid, he remarks; they devote their attention almost exclusively to the output, neglecting this important outpost. By limiting the fluids ingested, the amount of secretion dropped at once in his cases of bronchiectasia, gonorrheal putrid bronchitis, asthma and abscess in the lung. The intake of fluids must be gradually restricted, commencing with three "thirst days" in which the total amount of fluids, given in water, milk and soup should not exceed 400 to 200 c.c. fluid. He allows 200 or 300 c.c. of white wine, fractioned, and one or two oranges or slices of lemon if the patient suffers from thirst. The third or fourth day the patient is allowed to drink freely up to 1,200 or 2,000 c.c. of fluids. Singer says that we all drink more than is really necessary, and that the above restriction may seem hard to some; in that case he gives a few drops of some sedative, possibly opium, which he has found very useful to combat the thirst with nutrient enemas. Allowing a day of let-up on the restrictions twice a week, the "thirst cure" is kept up for four or six weeks. The weight drops a little at first, but on an abundant mixed diet the patients soon regain and surpass their original weight. The method should not be applied on suspicion of tuberculosis or nephritis or to much-debilitated patients. A number of charts and roentograms are given; in one case of putrid bronchitis the amount of sputum dropped from 300 c.c. to 120 and 70 c.c. by the second day after commencing the "cure." It is possible that changes in the osmotic tension may cooperate in the symptomatic benefit derived. Observing the above precautions the method is not particularly exacting nor difficult for the patients to comply with.

68. **Tardy Suppuration in the Mastoid Process.**—Lüders has had four cases of this kind recently and six others in a previous series, a total of ten cases of suppuration in the mastoid process after an interval of up to two years after disease of the middle ear had apparently entirely healed. All but one of the patients were children. The symptoms in one case were severe pains in the side of the neck along the sternocleidomastoid muscle, pains more severe than could be elicited by pressure on the mastoid process itself. In another case the pains extended into the shoulder. Auscultation of the mastoid process was of great importance for the diagnosis. This was done by Dahmer's method of parallel auscultation. A phonendoscope with a single tube is placed on the right mastoid process and the tube carried to the left ear and a second phonendoscope is placed on the left process and carried to the right ear. The vibration of a tuning fork set on the top of the head is heard less distinctly with the right ear, for example, if the left mastoid process contains pus. This test never failed in his experience to reveal disease of the mastoid process after acute otitis media. The destructive lesion found in the mastoid process was quite extensive in all his cases, and it required from four weeks to four months for healing to be complete. The mastoid antrum was intact in every case. The pneumococcus was responsible for the trouble in three cases, the streptococcus in one. The middle-ear affection had definitely healed long before the mastoid trouble began, and the symptoms of the latter fluctuated and were separated by periods of apparent health. The cases reported teach the necessity for keeping patients under supervision for weeks at least after the healing of a middle-ear process, and they should be instructed to apply for medical aid at the slightest sign of trouble behind the ear or in that vicinity.

69. **Hydrochloric Acid in Pernicious Anemia.**—Croftan's work in this line is familiar to our readers. See THE JOURNAL, Aug. 13, 1910, p. 593.

72. **Impairment of the Memory.**—Ranschburg says that prophylaxis of nervous impairment of the memory should be along the lines of general hygiene for the nervous system, but, in addition, there should be a special hygiene of the memory. This, he declares, lies in training the mind to observe, grasp and correlate details to blend them into a comprehensive whole. Modern psychology has worked out a number of rules to guide in the training and rejuvenation of the memory, as he relates in detail. He calls attention to the waste of time and effort in requiring children to learn by the fractioned method, that is, to learn about a subject in small portions at a time, each without sense and interest until the whole are brought together to form the complete subject. This scrappy way of learning fails to impress the subject on the memory. The permanent memorizing of a subject is best accomplished by spacing the attention and repetitions given to it. For instance, if fifty repetitions are necessary to ensure complete memorizing, let only twenty be done the first day, ten the next day, five or ten after a few weeks, and the remaining ten or fifteen repetitions be strung along, one or two at a time, at intervals of months or years. The subject is then impressed indelibly on the memory; the same number of repetitions done in one or two days would by no means have accomplished this. This important fact applies not only to strictly educational matter, but to all impressions and all subjects which we wish to have permanently impressed on the memory. Questioning on the subject being memorized helps also to fix it in the memory; this calls attention to the weak points in the remembrance of the subject. Acute functional exhaustion of the memory requires treatment as for cerebral asthenia in general. The memory should be strengthened by exercise and training, but this should never be done during times of fatigue or worry. The methods most effectual for this are those which seek to sharpen the attention and perception. The memory for figures can be improved by exercises calling on the ear and eye for close attention and capacity for reproduction. He has some third party enunciate clearly single figures at intervals of a few seconds, aiming to reproduce in the patient's mind, through the hearing, some well-defined figures; a few seconds, minutes or hours later the patient is asked to repeat these figures in the sequence in which he heard them. The same principle is applied in training the eye to remember figures; single figures are shown the patient, at first in big type, but gradually the type is reduced to ordinary print. The heard figures are reproduced visually and the visualized figures are reproduced by the hearing in the next set of exercises, and more complicated figures are used, such as the house or telephone number, year, etc. Better results are possible with this simple method than with any of the so-called mnemonic methods. It is important to train the patient in the figures he is liable to use most in every-day life. A quarter of an hour a day is enough for such exercises at first. Another useful exercise is to write out a list of the names of acquaintances and try to remember the persons that go with the names. Another exercise is to cut out from old magazines a number of portraits and, keeping the names covered, try to remember from the picture the name of the original of the portrait, and vice versa. On meeting a new acquaintance, special attention should be paid to the name and it should repeatedly be called up in the mind, with the remembrance of the person's appearance. Repetition of this at longer and longer intervals, through weeks, will aid materially in training the memory. Absent-mindedness may be the result of unhygienic sexual practices, or worry on their account, or of physical fatigue or weakness, and the occupation or mode of life should be regulated to permit intervals for rest and recuperation. Psychotherapy may be required to dispel obsessing ideas interfering with normal trains of thought and memory. A stay in a sanatorium, with courses of electricity and massage, by improving the general health may restore the memory to normal conditions. Iron and arsenic seldom do much good; preparations containing phosphorus have proved more useful in Ranschburg's experience. A rural life with care of farm and garden and light work in general, with out-of-door sports, may also prove useful, or a long sea voyage or trip to the moutains or seashore.

Jahrbuch für Kinderheilkunde, Berlin

December, LXXVI, No. 6, pp. 645-760

80 Urobilin and Urobiligen in Infants' Urine. (Zur Frage Urobilinurie und Urobilinogenurie bei Brustkindern.) S. Ostrowski.
81 *Angina and Scarlet Fever. F. v. Szontagh.
82 Intestinal Stenosis in the New-Born Child with Rectal Plug of Mucus and Epithelium. (Rektaler Schleimepithelpfropf und Darmstenosen beim Neugeborenen.) Trumpp.
83 Congenital Stenosis of the Pylorus in Infant with Development of an Hour-Glass Stomach. (Ein Fall von angeborener Pylorusstenose—Typus Landerer-Maier—beim Säugling, und Entwicklung des Sanduhrmagens.) F. Schafer.
84 Chronic Polyarthritis with Enlargement of Spleen and Fever in a Child. (Ein Fall von Still'scher Krankheit.) H. Koeppe.

81. **Angina and Scarlet Fever.**—Szontagh maintains that acute tonsillitis and scarlet fever are merely the different reactions of the organism to the same disease. They are both the result of infection by pyogenic bacteria. Both are constitutional diseases manifested in the one case by local changes in the tonsils and pharynx, in the other by a cutaneous reaction, the eruption of scarlet fever. This eruption, he declares, is a manifestation of the hypersensibility which is common to childhood, but varies greatly in different individuals. It is one of the most classic and characteristic examples of anaphylaxis. When a hypersensitive individual is attacked with angina, the clinical picture of scarlet fever is produced. The problem of scarlet fever is, therefore, not a question of specific infection, but of an individual hypersusceptibility.

Medizinische Klinik, Berlin

December 22, VIII, No. 51, pp. 2057-2094 and Supplement

85 Phobias and Their Relation to Obsessions. (Phobien, bes. Platzangst.) M. Rhode. Concluded in No. 52.
86 Diagnosis of Acute Poliomyelitis. W. v. Starck.
87 Spinal Anesthesia. (Lumbalanästhesie.) C. Schütte.
88 The Wassermann Reaction in Internal Diseases. H. Dreesen.
89 Madelung's Deformity. G. Magnus.
90 Arsenic Poisoning During Treatment of Syphilis. (Medikamentöse chronische Arsenvergiftung bei einem Lueskranken.) E. Brodfeld.
91 Goiter Operations; 600 Cases. F. Demmer. Commenced in No. 48.
92 Factors Which Enhance Potency of Drugs in Combination. (Ueber wirkungspotenzierende Momente in Arzneigemischen.) E. Bürgi. Commenced in No. 50.
93 *Roentgenotherapy in Gynecology and Obstetrics. (Verwendung der Röntgenstrahlen in der Geburtshilfe und Gynäkologie.) E. Runge.

93. **Roentgenotherapy in Obstetrics and Gynecology.**—Runge reviews the history of this branch of medicine and his own experience in this line. He emphasizes that the roentgenologist alone should never attempt treatment in gynecologic cases. Only the gynecologist is justified in doing this; it is much easier for a gynecologist to perfect himself in the Roentgen-ray technic than for a roentgenologist to acquire gynecologic skill. To illustrate this he mentions a case in which six weeks after some Roentgen-ray exposures for climacteric hemorrhage there was slight vaginal bleeding. Examination showed an incipient cancer in the cervix which was easily removed. If a roentgenologist alone had been treating the patient he would probably have ascribed the bleeding to the menopause, and the cancer might have passed undiscovered into an inoperable stage. The danger of malignant degeneration is the great drawback to roentgenotherapy of myoma. Warnekros found sarcomatous degeneration in 10 per cent. of the cases in Bumm's clinic. The younger the patient the less amenable to roentgenotherapy, and the intestinal contents and adipose layer in the abdominal walls are also important factors in the outcome of roentgen treatment. Runge has applied it in 111 myoma cases. The hemorrhages were favorably influenced in 84.4 per cent.; no effect was apparent in 16.6 per cent. The tumors became reduced in size only in 25 per cent. In the women over 50, 85.7 per cent. had no further hemorrhages; 82 per cent. of those between 45 and 50; 50 per cent. of those between 40 and 45; 31 per cent. of those between 35 and 40 and 43 per cent. between 30 and 35. He does not approve of roentgenotherapy for dysmenorrhea in young women, as the exposures may have an unfavorable influence on future pregnancies, but brilliant results may be obtained in gynecologic skin diseases, especially essential pruritus not caused by diabetes or vaginal discharge. The Roentgen rays cure in many such cases; the results were extremely satisfactory in his seven cases in this category; in Kelen's four cases; Döderlein's two and Eymer-Menge's one case. Runge found the exposures equally favorable in two rebellious cases of eczema of the vulva with intense itching. The pruritus disappeared at once. The Roentgen rays have not proved as useful as anticipated in the field of obstetrics, especially in determining the size of the bony pelvis and of the fetus. It has been demonstrated, however, that intensive exposure of the uterus injures or kills the rabbit fetus. In the clinic such large doses and such long exposures are necessary for this purpose that this method of inducing abortion has no practical value. The possible injury in later pregnancies also excludes the (theoretically well grounded) method of inducing a temporary sterilization of tuberculous women by Roentgen exposures of the ovaries. The ovaries later recuperate and resume functioning, but there is liable to be serious injury of the products of a later conception.

Monatsschrift für Kinderheilkunde, Leipsic

XI., No. 7, pp. 281-356

94 *Early Stages of Acute Anterior Poliomyelitis. (Die Frühstadien der epidemischen Kinderlähmung.) E. Müller.
95 Stenosis of the Gall Passages in New-Born Infants. (Ein Beitrag zur Frage der Gallengangsstenose beim Neugeborenen.) K. Sugi.
96 Excretion of Sugar-Splitting Ferment in Infants. (Ueber die Ausscheidung von zuckerspaltenden Fermenten beim Säugling.) F. Lust.
97 Excretion of Albumin, Starch and Fat-Splitting Ferment in Infants. (Ueber die Ausscheidung von Eiweiss-, Stärke- und fettspaltenden Fermenten beim Säugling.) H. Hahn and F. Lust.
98 Leishmania Anemia. Jemma.

94. **Early Stages of Acute Anterior Poliomyelitis.**—Müller remarks that the paralysis in anterior poliomyelitis is the end-result of an acute specific infectious disease that manifests itself in the early stages in a manner similar in many respects to that of other acute infections of childhood. There are irregular fever, coryza, sometimes bronchitis, digestive disturbances, particularly of the intestinal musculature, and frequently meningeal symptoms. The latter can be distinguished from those of true meningitis, however, by the fact that the muscles are flaccid, not rigid. There is no true opisthotonos and no Kernig's sign, nor somnolence during the day and restlessness at night. Valuable diagnostic signs are the extreme hyperesthesia, marked tendency to sweating in spite of fever, diarrhea and the results of spinal-fluid examination. The spinal fluid is increased in quantity, but is clear and sterile, with moderate lymphocytosis and an increase in albumin. The blood-picture, unless there is mixed infection, shows leukopenia, with relative lymphocytosis and eosinophilia. The age of predilection for poliomyelitis—the first three years of life—must be taken into consideration. In epidemics there are frequent abortive cases which show the prodromal symptoms, but in which the injury to the spine is not serious enough to be followed by paralysis.

Münchener medizinische Wochenschrift

December 17, LIX, No. 51, pp. 2793-2848

99 Supernumerary Mammary Glands. (Hyperthelie.) E. Bresslau.
100 *Action of Light on Tissues. (Zur Wirkung des Lichtes.) F. Bering.
101 Gastric Plus Pancreatic Achylia. (Gleichzeitige Vorkommen von Achylia gastrica und pancreatica.) O. Gross.
102 Why Menstrual Blood Does Not Coagulate. (Ursache für die Gerinnungsunfähigkeit des Blutes bei der Menstruation.) A. Dienst.
103 Induced Abortion in Mental Disease. (Zur Frage des künstlichen Abortes bei psychischen Störungen.) E. Meyer.
104 "Abstinence Delirium" in Chronic Alcoholism. (Zur Frage der sogenannten Abstinenzdelirien der chronischen Alkoholisten.) K. Fürer.
105 Importance for Infant of Adequate Intake of Fat. (Bedeutung ausreichender Fettzufuhr für den Säugling und ihre praktische Durchführbarkeit.) K. Stolte.
106 *Immediate Suture of Bladder After High Incision for Calculi. (Erfahrungen mit der Blasennaht beim hohen Steinschnitt an Kindern.) Grussendorf.
107 Absorption of Albumin-Containing Preparations of Iron. (Zur Frage der Resorption von Eisenpräparaten.) F. Rabe.
108 Treatment of External Anthrax. (Zur Behandlung des äusseren Milzbrandes.) K. E. Veit.
109 Spirochetes in Urine with Syphilitic Nephritis. K. Vorpahl.
110 Salvarsan in Abortion of Syphilis. (Abortivkuren mit Salvarsan.) E. Freund.
111 Hypophysis Extract in Obstetrics. (Hypophysenextrakt und Dämmerschlaf in der praktischen Geburtshilfe.) A. Hengge.
112 Diagnostic Inoculation of Animals. (Zur Frage des Tuberkulosenachweises durch beschleunigten Tierversuch.) R. Oppenheimer.

100. **Action of Light on the Tissues.**—Bering's research has demonstrated that the chemically active light rays have a direct influence on the oxidation ferments, especially on peroxidase in tissues maintained in permanent life *in vitro*. The rays seemed also to promote the cleavage of the chemical building-stones of the body cells. This action of the light rays on cleavage and oxidation—the main factors in the intermediate metabolism of the cells—explains a certain number of phenomena observed in daily life and in the clinic, as he relates in detail, especially the deposit of pigment and the sensitization of the tissues.

106. **Suturing the Child Bladder After High Incision.**—Grussendorf protests against the assumption that it is always better to suture the bladder at once after removal of calculi through a high incision. He cites experiences from his own service and from the literature showing that immediate suturing, especially in case of children, materially enhances the dangers of an operation on the bladder. He has operated on forty children under the age of 10, for removal of calculi in the bladder, in the last eight years, all boys but two. Primary suture was the rule in twenty-one cases, but complications followed from the suture in all but eleven, so that only these eleven children could be dismissed in good condition at the end of the second week. In ten of the others a fistula developed and in three others general symptoms followed, so severe that the bladder had to be opened up again. The healing period in the nineteen unsutured cases averaged forty-five days, and all the little patients recovered except a child of 2 with severe uremia before the operation. In the nineteen cases with immediate suture, two of the children died and a third was saved only by reopening the bladder. The history of these fatal cases shows that the immediate suturing of the bladder was apparently responsible for the fatal outcome. They teach that the bladder should not be sutured at once when the bladder is very irritable, even when the general condition seems to be good, if the irritability of the bladder does not yield in a few days to bed rest and appropriate treatment. Open treatment of the bladder wound is preferable also when the general condition is bad, even in the absence of fever and of other signs suggesting pyelitic infection. He would further exclude from the immediate suture all those cases in which the mucous membrane of the bladder has lost its elasticity, so that the first tier of the suture, in the membranous lining of the bladder, does not guarantee against seeping of fluid. These three categories of cases should be excluded from the otherwise indisputable advantages of the immediate suture of the incision into the bladder. On the other hand, he found it possible in some of his more recent cases, with siphon drainage, asepsis and frequent antiseptic rinsing out of the bladder, to ensure healing almost as soon and as free from complications as after the most successful immediate suture.

Wiener klinische Wochenschrift, Vienna

December 26, XXV, No. 52, pp. 2033-2056

113 Localization in Cortex of Cerebellum. (Lokalisation in der Rinde der Kleinhirnhemisphären des Menschen.) R. Barany.
114 Primary Symmetric Brachial Plexus Neuritis as Symptom of Tardy Syphilis. G. Stiefler.
115 Chronic Catarrh from Enlarged Tonsils. (Catarrhus chronicus hypertrophicus der Tonsilla lingualis.) A. Zografides.
116 Comparison of Test Breakfasts. (Klinische Vergleichung des Ewald-Boas- und des Mintzschen Probefrühstückes.) J. Hatiegan and B. Döri.

Zeitschrift für Kinderheilkunde, Berlin

V, No. 5, pp. 345-454

117 Study of the Formation of Immune Bodies in Human Serum by Intravenous Injection of Diphtheria Toxin. (Ueber die Wertbestimmung des Schutzkörpergehaltes menschlichen Serums durch intracutane Injektion von Diphtherietoxin beim Menschen.) M. Michiels and B. Schick.
118 *Etiologic Factors in Tuberculous Meningitis. H. Koch.
119 Conditions Resembling Gigantism in Childhood. (Ueber riesenwachsähnliche Zustände im Kindesalter.) E. Thomas.
120 The Salol-Splitting Ferment in Breast-Milk and Its Significance in Salol Medication. (Ueber ein salolspaltendes Ferment in der Frauenmilch und dessen Einfluss bei Salolmedikation.) W. Usener.
121 The Cause of Air Swallowing in Infants. (Ueber Luftschlucken, besonders beim Säugling. Ein Beitrag zur Etiologie.) W. Usener.
122 A Simple Method for Determining the Coagulation Time. (Eine einfache Methode zur Bestimmung der Gerinnzeit.) J. Michiels.

118. **Etiologic Factors in Tuberculous Meningitis.**—Koch's conclusions are based on a study of 306 cases of tuberculous meningitis. He encountered the maximum number of cases in April with a steady decrease until December; 68 per cent. of all the cases occurred in the first four years of life, with the largest number in the second year. In other forms of tuberculosis only 15 per cent. of the cases occur in the first four years. Infection from tuberculous parents was shown in only 23 per cent. of the histories; 75 per cent. of the patients had brothers and sisters—a total of 380—of whom forty-seven died of tuberculosis, among them 22 per cent. from tuberculous meningitis. In one family four children died of tuberculous meningitis. Breast or artificial feeding apparently had no effect on the number or severity of the cases; 129 of the patients had had measles, sixty within the past year and twenty-one within four months. In ten cases autopsy showed a direct causal relation between the measles and the meningitis. In six cases there was a history of whooping-cough within four months, and in four of these a direct relation was shown. Other infectious diseases apparently were without influence. In thirteen cases trauma was given in the history as a cause, but in only two of these could it be shown to be an etiologic factor. There were only forty-nine cases preceded by other tuberculous manifestations which were clinically evident, but on careful post-mortem examination a primary tuberculous focus was found in the lungs in almost every case. In 162 cases there were other chronic but still active tuberculous processes. There was not a single case of a definite primary focus in the intestines, and there were only two cases in which the old tuberculous focus had become calcified. The data demonstrate that meningitis arises only while tuberculous foci elsewhere are still active.

Gazzetta degli Ospedali e delle Cliniche, Milan

December 22, XXXIII, No. 153, pp. 1601-1616

123 *Respiration Rate in Disease of Respiratory Passages. (Sul rapporto della frequenza del respiro con la temperatura interna nelle malattie limitanti il campo respiratorio.) G. A. Pari and A. Ponzian.

December 24, No. 154, pp. 1617-1624

124 Rupture of Veins as Industrial Traumatism: Two Cases. (Rotture da sforzo dei vasi venosi in operai in occasione di lavoro.) A. Mori.

123. **The Respiration Rate in Internal Diseases.**—Pari and Ponzian report their study of the respiration rate in connection with the fever in twenty-seven patients with various affections. The respiration rate increases by about 4 with every Centigrade degree of temperature, and it is exceptionally rapid when the disease is limited to the air passages. But instead of these two causes, when superposed, having a cumulative effect, the reverse is observed, one of these factors seeming to neutralize the other. They give a number of history charts to illustrate this and they theorize to explain it.

Riforma Medica, Naples

December 21, XXVIII, No. 51, pp. 1501-1528

125 Internal Medicine Findings as Guide to Gastro-Intestinal Surgery. (Sguardo alla odierna chirurgia gastrointestinale sotto il punto di vista delle indicazioni fornite dalla Medicina interna.) I. Tansini.
126 The Duodenal Sound. (Sulla determinazione radioscopica della regione pilorica mediante la sonda duodenale.) F. Guigni.
127 Spontaneous Perirenal Hemorrhage. M. Abetti.

Brazil-Medico, Rio de Janeiro

December 1, XXVI, No. 45, pp. 469-478

128 Transient Aphasia from Malaria. (Caso de aphemia transitoria palustre—Aphasia motora verbal, funccional, de origem paludica.) J. A. G. Froes. Commenced in No. 43.

December 8, No. 46, pp. 479-488

129 Ankylostomiasis in Brazil. R. Meira and C. Paranhos.
130 Karell's Milk Cure in Asystole. G. Armbrust.

Semana Medica, Buenos Aires

November 28, XIX, No. 48, pp. 1101-1160

131 *Typhoid Perforation. (Concepto clinico-quirurgico sobre la perforacion intestinal tifoidea.) D. Del Valle.
132 *The Stools When There Is a Foreign Body in the Intestine. (Pañal de cuerpo extraño.) C. R. Castilla and E. Adalid.
133 *Acute Postoperative Dilatation of the Stomach. J. Magaldi.
134 The Ultraviolet Rays. (Las propiedades fisicas de los rayos ultravioletas.) M. Matout.

131. **Perforation of Intestine in Typhoid.**—Del Valle says that the prognosis is more favorable when the perforation does not occur until five or six days after defervescence, that is, after the fourth week. The infection by this time has become attenuated and the condition in general has begun to improve. Another feature of the perforation at this stage of the disease is that it is generally single and the omentum is capable of some defensive action by this time. Most of the successful operative cases of typhoid perforation on record were of this tardy type. When the perforation occurs before the end of the second week the infection is usually extremely virulent, and when it occurs at the end of the third week the patient's resisting powers are at their lowest ebb. The perforation should be operated on under local anesthesia, and the incision should be over the terminal portion of the ileum, as the perforation almost invariably occurs at this point; in every case in Del Valle's experience the perforation was within 15 or 20 cm. of this point. It is difficult to suture the friable tissues in which the perforation has occurred, and the suture is liable to slough out almost at once, leaving a fistula. But this is a trifling inconvenience in comparison to the danger from the perforation. Ample drainage by Mikulicz' technic is necessary, and the operation should be done as rapidly as possible to shorten the period of shock. He reports a successful operative case.

132. **The Stools with a Foreign Body in the Intestines.**—Castilla and Adalid state that irritation from a foreign body in a child's intestines leads to a characteristic formation of the stools which may sometimes have great differential value. The symptoms caused by the presence of the foreign body vary within a wide range, but the stools have a characteristic aspect. The uniformity of the solid or semi-solid mass is broken by an opaque serous spot or spots of a tint different from that of the rest of the mass and sometimes varying in tints. The aspect of this serous patch in the stool differs from that of the rest of the mass, it is said, as a water-color painting differs from an oil painting. Careful examination of all the stools on suspicion of a foreign body will often clear up the dubious diagnosis. The persistence of this characteristic finding in the stool is typical.

133. **Acute Postoperative Dilatation of the Stomach.**—Magaldi reports four cases, remarking that the better knowledge of this condition in recent years has led to its more frequent recognition. Chloroform, swallowing of air and sagging of intestines are its more frequent causes. The modern view regards the dilatation as the primary factor. The diagnosis is simple if the possibility of acute dilatation of the stomach suggests itself to the mind. Lavage of the stomach, with tonics for the heart, are useful, but change to the ventral decubitus is the most useful measure. His patients were a girl of 17 and three men, 17, 39 and 61 years old. None survived beyond the fifth day, as was also the case in 75 per cent. of sixty-three cases out of the total seventy-four fatal cases on record.

Ugeskrift for Læger, Copenhagen

December 12, LXXIV, No. 50, pp. 1889-1936

135 *Endobronchial Treatment of Bronchitis and Asthma; Thirty Cases. C. Heilskov and L. Mahler.
136 Fracture of the Neck of the Femur: Two Cases. Schlambusch.

135. **Endobronchial Treatment of Bronchitis and Asthma.**—Heilskov and Mahler have applied direct local treatment in thirty cases. They used the bronchoscope in all but two cases as this permitted more careful application of the drug by direct oversight of conditions. In none of the 120 applications was there any evidence of toxic injury. A combination of 0.1 gm. novocain; 1 gm. of 1 per 1,000 epinephrin, and 9 gm. of a 0.9 per cent. solution of sodium chlorid was generally used, but sometimes Schleich's solution was given the preference, or a 3 per cent. solution of cocain, with a little epinephrin. Ephraim's bronchoscopy technic was followed in only a few cases; in the others bronchoscopy and direct application of the drug was preferred. In the three bronchitis cases great benefit was derived from five treatments in one case, marked improvement from three treatments in another, while the other patient did not seem to be materially improved, although all were subjectively much relieved. The mucosa in all was found very red and swollen and during expiration or coughing sometimes the lumen was seen to close up entirely. In the asthma cases all the patients felt much relieved by the applications. They were made from two to eleven times and each time the patients felt that they could breathe easier and deeper. In the total thirty cases the final outcome was a complete cure in six cases and marked improvement in eleven; in the other thirteen no permanent benefit was apparent. These results justify the application of endobronchial treatment in chronic rebellious cases. The treatment was applied outside of the attacks in the asthma cases and conditions in the trachea and main bronchi were found approximately normal. The bronchoscopy alone seemed to benefit, promoting expectoration and deeper breathing, even when merely sterile water or nothing was applied.

Upsala Läkareförenings Förhandlingar

XVIII, Nos. 1-2. Last indexed Oct. 26, p. 1586

137 General Principles of Immunology. (Om immunitetsläran.) S. G. Hedin.
138 *Nephrectomy with Bilateral Renal Tuberculosis. (Om nefrektomi i fall af dubbelsidig njurtuberkulos.) G. Ekehorn.
139 Technic for Resection of the Colon. G. v. Holst.
140 Series of Attacks in Manic Depressive Psychoses. ("Serie-vis" uppträdande sjukdomsanfall i maniskdepressiv psykos.) V. Wigert.
141 *Reaction in the Pleura to Tuberculin. (Réaction pleurale à la tuberculine.) G. Bergmark.
142 The Potent Elements in Ergot. (De verksamma beståndsdelarna i sekale och sekaleextrakter.) C. G. Santesson.
143 Some Laws of Physics as They Affect Vital Processes and Disease. (Om tröghetslagens tillämpning på cellens lif och dess betydelse för sjukdomslären.) L. Wolff.
144 Technic for Cultivation of Certain Bacteria. (Några råd och vinkar vid beredandet af de vanligaste näringssubstraten för bakterier.) I. Styk.

138. **Nephrectomy in Bilateral Renal Tuberculosis.**—Ekehorn reports six cases in which he removed a tuberculous kidney although everything seemed to indicate that the other kidney was also diseased. The disease in the primarily affected kidney was in such an advanced, poison-generating stage that it had to be removed, even although the second kidney was known to be not entirely sound. In order to determine whether the condition of the second kidney will permit the removal of the primary focus, it may be necessary to make an exploratory incision for inspection and palpation. The kidney itself should not be incised, but the adjoining portion of the ureter should be examined and the kidney pelvis palpated from without. Unless the ureter is found soft and normal and the kidney free from pronounced tuberculous changes, the proposed nephrectomy had better be abandoned. Both operations can be done at one sitting. The general health will determine whether nephrectomy can be done. In any event severe parenchymatous nephritis and amyloid disease contra-indicate it. In Ekehorn's six cases the patients bore the nephrectomy without harm, both operations being carried out at one sitting. All but one of the patients were very much benefited. In one case the diagnosis of a tuberculous process in the second kidney had probably been a mistake. Even the above exploratory incision and examination will not always reveal whether the kidney is actually tuberculous or not—even slitting the kidney from pole to pole will not always decide the question, and it is very important to refrain from incising or injuring in any way the kidney tissue proper. Ekehorn gives also the details of eight other cases of advanced renal tuberculosis in which nephrectomy proved impracticable.

141. **Reaction in the Pleura to Tuberculin.**—Bergmark calls attention to the focal reaction in the pleura when the tuberculin test is applied in serofibrinous pleurisy. The focal reaction causes local pain, increases the cough and friction sounds, while the area of dulness spreads and the effusion may become more turbid. He has applied the tuberculin test in this way in seventeen cases of pleurisy. A positive general reaction was apparent in fifteen cases but not in the others, and the course of the cases excluded tuberculosis in these.